POSER® 4

User Guide

for Macintosh® and Windows®

Credits
Poser was originally created by Larry Weinberg. MetaCreations Poser was created by Larry Weinberg, Seath Ahrens, Jianhua Shen, Sree Kotay.

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OOH
COOL
WOW
ZAP
BUT SUDDENLY, CHEERS OF JOY BECOME SHRIEKS OF TERROR.

Welcome to Poser 4

Poser is an easy-to-use figure design and animation tool. With Poser you'll produce lifelike 3D illustrations and animations of human and animal figures in action—dancing, scaling a cliff, meditating, even walking.

Poser is great for anyone who wants to add realistic human and animal figures to an art project. It's a welcome companion to your favorite graphics, illustration, 3D, animation, and multimedia applications.

What's New in Poser 4?

If you're a Poser 3 user, the following information will bring you up to date with the new features in Poser 4.

Conforming Figures and Clothing

One of the most requested features for Poser is the ability to change clothes on the Poser figures. Poser now includes wardrobes of custom clothing in the Libraries palette. Custom clothing behaves the same as Poser figures; each article includes parameters for the corresponding body parts. You can conform clothing to a figure so that it moves as the figure moves. Refer to "Working with Clothing" on page 164 for complete information on clothing.

Bendable Props

When you attach a prop to a body part, you can configure it to bend as the body part bends. This feature is helpful for naturally bendable objects, such as a rollerblader's elbow pads. For details, refer to "Setting Prop Parents" on page 171.

New Lighting Features

Poser's lighting controls are completely redesigned. Now you have the choice of using traditional infinite lighting or spotlights that you can move around the studio. You can add an unlimited number of lights, as well as delete them, to fit your needs. The new light control also includes an intensity control. All the new lighting features are discussed in "Lights" on page 189.

Poser now supports spherical reflection maps and transparency maps. For details, refer to "Surface Materials" on page 243.

Deformers

Poser now includes two deforming tools. The Magnet deformer allows you to stretch and pull body parts and props. The Wave deformer lets you add ripples to objects such as clothing, ground planes, and props. Deformers can be animated and used to create morph targets. These tools are discussed in detail in "Using the Deformer Tools" on page 143.

Morph Targets

You can now access a library of figures and props with built-in morph targets. Poser includes targets for single body parts as well as a full figure morph. You can also use the deformers and Parameter Dials to create your own morph targets. The possible applications for morph targets are infinite. Learn all about morph targets in "Using Morph Targets" on page 152.

Hierarchy Editor

With Poser's new Hierarchy Editor, you now have complete control over the figures, props, cameras, and lights in your scene. The Hierarchy Editor provides an easy way to select, delete, and rename objects. It's never been easier to turn visibility on or off for figures, body parts, props, or lights. With the

Hierarchy Editor, you can adjust parent-child relationships and create IK chains. For the truly ambitious, the Hierarchy Editor is an exciting route to creating brand new Poser figures. Refer to "Hierarchies" on page 289 for complete information.

Sketch Designer

Rendering possibilities are greatly expanded with the new Sketch Designer, which lets you create and refine hand-drawn quality portraits of your scenes. Drawings are rendered with a series of brush strokes that define the background, edges, and actual elements. Many drawing options are available, so you can tailor the strokes to your liking. For details, refer to "Using the Sketch Designer" on page 265.

Grouping Tool

The new grouping tool is a powerful feature for assigning materials and generating new props and objects. It also complements the deformer tools and morph targets: you can specify sections of a body part or prop for deforming and morphing. Refer to "Using the Grouping Tool" on page 157 for complete information.

Copying and Pasting

Cut, Copy, and Paste commands are now included in the Edit menu, so you can easily copy poses, body shaping, and animations to other figures, body parts, and props. This new functionality is explained in detail in "Copying and Pasting" on page 143.

New Document Display Styles

You can choose from 12 interactive display styles in the Document Display Style palette. New styles include flat shaded with mesh, smooth shaded with mesh, and cartoon style without lines. Refer to "Previewing Your Figure" on page 37 for explanations of all 12 display styles.

When You Have Questions

You can find answers to most of your questions in the following sources:

- Status line tips - As you move the cursor over most UI elements, descriptions appear at the top of their palette or window.
- Poser 4 User Guide - Provides all the information you need to get the most out of Poser. The Poser CD includes a PDF version of the User Guide. Adobe Acrobat Reader is required to read the PDF file format. Adobe Acrobat Reader software is available on the Poser CD or downloadable for free from www.adobe.com.
- Web links - You can launch your web browser and access MetaCreations and Poser-related web sites directly from Poser. To do this, choose **Help menu> Web Links>** *choose a link*.

About Your User Guide

The Poser 4 User Guide is for both Macintosh and Windows. By convention, Macintosh commands precede Windows commands in the text. For example, Command/Ctrl+I, is equivalent to the Macintosh Command-I and the Windows Ctrl+I. For simplicity, the term "folder" refers to directories as well as folders. The Poser interface for Macintosh and Windows platforms is identical, unless otherwise specified.

When a modifier key differs between the Macintosh and Windows platform, the Macintosh modifier is listed first followed by a slash and the Windows modifier key. Option/Alt means Macintosh users press the Option key and Windows users press Alt.

There are several conventions used to identify paths to certain tools and controls. The convention to a menu follows the rule of the **menu name> menu item**. The convention to a palette follows the rule of the **palette name: subpalette name**. The convention to a palette menu follows the rule of **palette name: palette menu> menu item**.

Technical Support

Online technical support is free to registered users of Poser. There are two easy ways to contact technical support for questions about installation, configuration, or functionality. These options are: Web support and phone support.

You'll find the answers to most of your questions in this User Guide. If you need further assistance, you can contact MetaCreations' Technical Support in the following ways:

Web Support

Many of the answers to your questions are available 24 hours a day on our Web site:

http://www.metacreations.com/support

In addition to frequently asked questions (FAQs), the Web site provides troubleshooting techniques, late breaking product news, and other resources to help you get the most out of Poser.

Phone Support

Free phone support is available for a limited duration after your first call. The length of time varies based on the product and whether it is an upgrade or a first-time purchase. MetaCreations also provides additional paid support options. Details about phone support can be found in the Technical Support insert included with your product.

Phone support hours are Monday–Friday, 8:00 AM–5:00 PM Pacific Standard Time, excluding holidays.

For Standard Support, call (831) 430-4000. Please have your serial number handy and be at the computer where you need assistance.

For international support, please contact your local distributor. To locate the distributor nearest to you, check the Web site at:

http://www.metacreations.com/support/intl

Installing Poser

This section provides installation instructions for both Macintosh and Windows. Follow the instructions appropriate to your system.

Note

Poser is intended for local installation only. Do not attempt to install it onto a network server.

System Requirements (Macintosh)

- Power PC and compatible models
- System 8.0 or higher
- 32 MB application RAM (64+ MB recommended)
- 240 MB available hard disk space
- 16-bit color (24-bit recommended)
- CD-ROM drive

System Requirements (Windows)

- IBM® PC compatible
- Pentium processor
- Microsoft® Windows® 95, Windows 98, or Windows NT version 4.0 with Service Pack 3 or later
- 32 MB available system RAM (64+ MB recommended)
- 240 MB available hard disk space
- Color display (true color recommended)
- CD-ROM drive

Macintosh Installation

When you install Poser on a Macintosh, create a custom extension set for the installation. You can save your current extension set, so that you can go back to it after installation.

To create a custom extension set:

1. Select **Apple menu> Control Panels**.
2. Double click the Extension manager.
3. Save your current extension set by selecting duplicate set; give it a new name. After installation, you can go back to this set.
4. Deselect everything.
5. Expand the Extensions folder by clicking the arrow to the left of it.
6. Check the Apple CD-ROM, Quicktime, and Quicktime Powerplug extensions.
7. Restart.

To enable extensions:

1. Double-click to open the hard drive.
2. Double-click to open the System Folder.
3. Open Control Panels.
4. Double-click the Extension Manager.
5. Check all to enable all extensions or choose your own custom set.

To install Poser 4 on a Macintosh:

1. Choose **Apple menu> Control Panels> Extensions Manager**.

2 To save your current extensions setting, click Duplicate Set, and enter a name in the dialog that appears. This will be the set of extensions you use for the installation.

3 In the new set, expand the Extensions folders and deselect all extensions except those for:

- CD-ROM or DVD-ROM
- Quicktime
- Quicktime Powerplug

Note

If you are not using standard Apple drives, your drives may require additional extensions to run properly. If so, turn those extensions on.

4 Insert the Poser 4 CD-ROM into your computer's CD-ROM drive. The Install Poser dialog appears.

5 Double-click the Poser icon.

6 Follow the instructions provided by the installer.

The installation dialog displays an important ReadMe.

7 Click Accept after reading the complete ReadMe.

Tip

Increase the RAM available to Poser by allocating any unused RAM to it. This allows Poser to run faster and handle larger files and renderings. However, be sure to leave some RAM for the system software. System software must dynamically allocate RAM to itself when required.

Windows Installation

Before you install on Windows, you must end any background tasks except for Systray and Explorer.

To end background tasks in Windows:

1 Type Ctrl-Alt-Delete. The Close Program dialog appears.

2 Click End Task for all items except Systray and Explorer.

This must be done one item at a time; repeat these steps to end each task that is open.

To install Poser 4 on Windows:

1 Insert the Poser 4 CD-ROM into your computer's CD-ROM drive. The Install Poser dialog appears.

2 Double-click the Poser icon.

3 Follow the instructions provided by the installer.

The installation dialog displays an important ReadMe.

4 Click Yes after reading the complete ReadMe.

Poser installs into C:/Programs/MetaCreations/Poser. If you change the drive where you want to install Poser, be sure to include a folder. For example, if you install on the D: drive, your path could be D:/Poser.

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Poser 4 Overview

How Poser Works

Poser is the easiest and most effective tool you can use to pose and animate figures. It is the perfect complement to any 3D illustration or character animation tool.

With Poser you can:

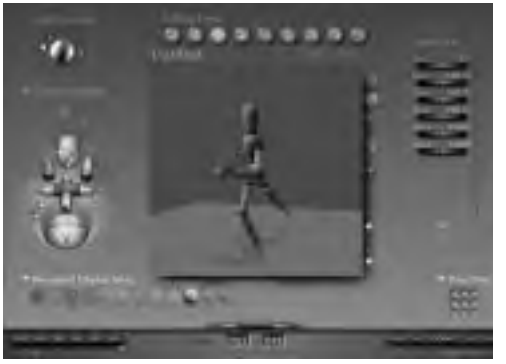
- Choose a figure from a large number of pre-built models included in the Poser Libraries
- Pose the figure using the posing tools
- Add colors and textures to your figures to create realistic or fantastic looks
- Set up poses to use as keyframes for an animation
- Render figures as still images or animations

The Poser Workspace

This section leads you through the Poser Workspace. Whether you are a previous Poser user or new to Poser, this section familiarizes you with the new Workspace.

You'll notice that Poser doesn't use traditional floating palettes and toolbars. Most of Poser's features are integrated into the Workspace, which fills your entire screen. This keeps the space uncluttered and makes tools easy to locate.

The new Workspace is incredibly flexible. Feature controls float over the top of the Workspace. You can move controls to any location and save their positions for later use. You can also change the color of the Workspace and add stylistic elements to its background. For more information on setting up the Workspace, refer to "Setting Up Poser" on page 25.



The Poser Workspace fills the screen and provides access to all of Poser's controls.

The Document Window

The Document window is where you view and pose your figure. It acts like a photographer's studio; you can move lights and shift between cameras to get a different perspective on your figure.

The view of your figure in the Document window is taken through a camera. Since you're in a three dimensional space, you can use this camera to view your figure from any angle, including above and below.

The Document window displays the current view of your figure.

You can resize the Document window to best suit your needs. In addition, several controls around the window let you change the appearance of elements within the window, such as the ground plane and the background.

The Ground Plane

The Ground plane represents the floor of the posing studio. This plane helps you orient the figure in 3D space. It also helps you orient your view of the figure. As you move the camera, the ground plane tilts or rotates to indicate the new orientation.

Use the Ground Plane to orient your figure in 3D space.

Camera Controls

The Camera Controls set the view of your figure in the Document window. There are two types of Camera Controls: the View controls and the Positioning controls.

Use the Camera Controls to set the view of your scene.

The View controls let you move between a number of preset views. By clicking or dragging this control, you can access all the available views in Poser.

The View controls let you quickly move the camera to a preset position.

The Positioning controls let you move the camera interactively. There are two sets of positioning controls: the Camera Plane controls and the Rotation Trackball. The

Camera Plane controls let you move the camera along specific planes. For example, you can move the camera in only a vertical or horizontal direction.

The Camera Plane controls let you move the camera along a plane in 3D space.

Tool titles indicate which two axes the camera is moving in.

The Rotation Trackball control lets you tilt and spin a camera around the studio. With this control you can move the camera to almost any position while still keeping the figure in the center of your field of view.

The Rotation Trackball lets you move a camera around the Document window.

Note

The Rotation trackball does not affect the orthogonal cameras.

Light Controls

The Light Controls let you define preset positions for the lights in your virtual studio. With these controls you can change light color or illuminate your figure from various angles.

Use the Light Controls to set up the lighting for your figure.

Document Display Style Controls

The Document Display Style controls let you set the preview quality of the figure in the Document window.

The Document Display Style controls let you set how your figure is displayed in the Document window.

There are several preview styles available. Different styles work best for different operations. For example, at times you may want to view the entire mesh of a figure (Wireframe), at other times you may prefer a realistic look (Smooth Shaded).

Editing Tools

The Editing Tools let you adjust the position of the figure's body parts to create specific poses. Each tool moves the figure in a different way. Using a combination of controls, you can create an infinite number of poses.

The Editing Tools let you set the position of your figure's body parts.

The Parameter Dials

The Parameter Dials let you pose figures more precisely than the Editing Tools by adjusting the values of specific parameters.

The Parameter Dials let you precisely pose your figure using numerical values.

If all the Parameter Dials do not fit in the window, use the scroll bar to slide through the list.

The Libraries Palette

The Libraries palette contains all the figures and props available in Poser, as well as custom poses and light and camera settings. From this palette, you can access sub-categories and preview each figure or prop.

The Libraries palette contains all the figures and props available in Poser.

Use the Libraries palette to add or replace figures or props in the Document window.

Animation Controls

The Animation controls let you quickly set up animation keyframes. You can set up a pose as a keyframe, change to a new keyframe, change the pose, then set another keyframe. When you play the animation, the figure appears to move from one pose to the other.

The Animation controls let you quickly set up keyframes for your animation.

With the Animation controls, you can move quickly through keyframes, and add or delete them as needed.

Animation Palette

The Animation palette displays the animation timeline and lists all the keyframes that you have created for the figure. Use the palette to fine tune an animation.

The Animation palette lets you refine and edit your animations.

The Menu Bar

Although the Poser Workspace fills the entire screen, you can still access several features through the Menu Bar. You can also switch between Poser and other applications. On the Macintosh, the Menu Bar appears when you move the cursor over the top of the Workspace.

2

Poser 4 Basics

This chapter describes how to set up Poser 4 and describes some basic techniques for posing figures.

Setting Up Poser

Poser is a color application. For the best preview display, set your display to the highest color depth possible. To do this, use the Macintosh Monitors control panel, the Windows Setup options, or your video adapter control panel.

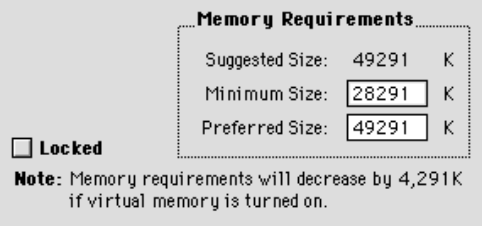
Macintosh Setup

By default, the Macintosh version of Poser is allocated a specific amount RAM appropriate for most systems. If you have more memory available, increase Poser's memory allocation to improve

application performance. To check the application's memory allocation, choose the **Apple Menu> About this Macintosh** in the Finder.

To increase Poser's memory allocation:

1. Make sure Poser is not running.
2. From the Finder, click the Poser program icon.
3. Choose **File menu> Get Info**. The Poser Information dialog appears.
4. For System 8.5 or higher, choose Memory from the Show popup



Use the Get Info dialog to allocate memory to Poser on the Macintosh

5. In the Memory Requirements section, increase the Preferred Size to a level appropriate for your system.

   For Poser to operate well with fully articulated Poser people figures, it must have at least 32 MB of RAM. However, do not use all the available memory on your computer; leave one megabyte or more for the system.

   If you don't have enough RAM, you can turn on virtual memory, which uses some disk space with a cost of slower performance.

Setting Application Preferences

Poser's preferences dialog lets you control how the application appears when it opens.

To set application preferences:

- Choose **Edit menu> General Preferences**. The General Preferences dialog appears.

Use the General Preferences dialog to set the interface's appearance and the application's launch state.

Document Preference

The Document Preference controls how the document appears when you start Poser or create a new document. You can make the document appear as it did when you last closed it, or in its default state.

For example, if you want to always start Poser with the Casual Woman and the ground plane on, you can load the woman, turn on the Ground Plane, and set this as the preferred state.

To set the Preferred State:

1. In the Poser workspace, move the palettes and controls to the positions you prefer.

2 Choose **Edit menu> General Preferences**. The General Preference dialog appears.

3 Click the Set Preferred State button.

To set the Factory state:

1 Enable the Launch to Factory State button.

2 Click OK

Interface Preference

The Interface Preference controls how the interface appears when you open Poser without using an existing document.

To set interface preferences:

- If you want the application to appear as it did when you closed it, enable the Use to Previous State radio button.
- If you want the application to launch in its default state, enable the Use to Factory State radio button

To close the General Preferences dialog, click OK.

Setting Up Your Workspace

Your Workspace reflects the layout of the controls and Document window. You can customize most controls within the Workspace can be customized to suit the way you work; place controls anywhere in the Workspace and store those changes for later use.

Note

As you move the cursor over the controls, text describing the Workspace elements appear

To re-position an element in the Workspace:

- Click the element's title and drag it to a new position.

  You can drag any of the controls, such as the Camera, Light, Display Style, and Parameter Dial controls.

To re-position the Document window:

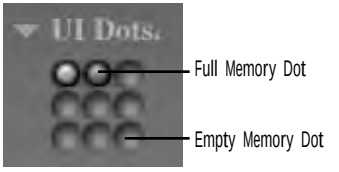
- Click the text label above the Document window and drag it to a new location.

To "window shade" a control so only its title appears:

- Double-click the title bar.

UI Memory Dots

The nine UI dots in the bottom-right corner of the Workspace store Workspace layouts, Poses, and Camera positions.



Use the Memory dots to save Workspace layouts, Poses, and Camera positions.

Note

You cannot use Poser 3 UI preferences in Poser 4

To save a Workspace layout:

1. Click the arrow icon next to the memory dot element title and choose UI Dots from the menu that appears.
2. Arrange the Workspace controls to their optimal positions.
3. Click an empty UI Dot. The Workspace layout is stored in that memory dot.

To retrieve a Workspace layout:

1. Make sure the memory Dot element title is selected.
2. Click on a full memory dot. The interface elements are re-arranged to conform to the stored layout.

To delete a saved Workspace layout:

- Option/Alt-click a full memory dot. The layout information is deleted from the memory dot.

Workspace Backgrounds

The Poser Workspace background includes several stylistic elements. You can change, move, or hide the figure, and you can change the Workspace background color.

To change the Workspace background figure:

- Option/Alt-click the background figure. Continue clicking until an image you like appears (one option is no figure).

To reposition the background image:

- Drag the figure to a new position.

To change the Workspace background color:

1. Click the Color tool.
2. Click on the background and choose a color from the Color picker.

To restore the default Workspace background color:

- Option/Alt-click the background.

Setting Up the Document Window

The Document window provides a view of the studio where you pose and view your figure. There are several parameters that allow you to change the window appearance to suit the way you work.

To interactively set the Document window size:

- Drag the size control circle until the window is the desired size.

Drag the size control to resize the Document window.

To numerically set the Document window size:

1. Double-click the window dimensions at the top-right corner of the Document window, or choose **Window menu> Document Window Size**. The Set Window Size dialog appears.
2. Enter Width and Height values.
3. Click OK.

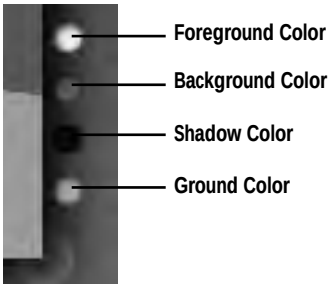
To move the Document window:

- Drag the Document window's title to a new position.

Document Window Color

To improve your view of the figure, you can set the background, foreground, shadow, and ground colors of the document window.

The Color controls are located in the bottom-right corner of the window.



Use the Color controls to set the color of Document window elements.

To set the Document window colors:

1. Click the appropriate color button on the bottom-right corner of the Document window.
2. Drag the dropper icon over the color picker that appears. Release the mouse button when you select the desired color.

Tip

To access the standard Macintosh or Windows color picker, Command/Ctrl-click the color button.

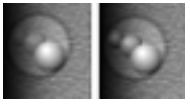
Depth Cueing

Depth Cueing adds dimension to objects in the Document window. Elements that are farther away fade into the distance.

An example of Depth Cueing with a figure in Wireframe display style.

To enable or disable Depth Cueing:

- Click the Depth Cueing button on the bottom-left corner of the Document window.



Enabled **Disabled**

The Depth Cueing button.

Figure Tracking

Tracking is a performance enhancing feature that changes the display of an object as you reposition its parts. For example, if you use Fast Tracking, a figure's body parts display as boxes when you're moving them, then revert to their display style when they stop moving,

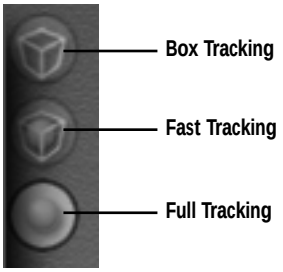
An example of Fast Tracking using a figure in Flat Shaded display style.

You can use the following types of tracking in the Document window:

- **Box Tracking** displays figures and objects as boxes at all times. Box Tracking is the fastest way to render objects.
- **Fast Tracking** displays figures and objects as boxes only when they are being dragged or animating.
- **Full Tracking** uses the display style at all times. With Full Tracking, large or complex objects render more slowly.

To enable a tracking mode:

- Click one of the tracking option buttons on the top-right corner of the Document window.



The Figure Tracking option buttons.

Paper Textures

You can enhance the view of the Document window by changing the Paper Texture. There are several texture options available—such as Paper, Weave, and Grid—to help you precisely position your figure.

A figure with a grid line texture applied to the background.

To choose a paper texture:

- Choose **Display menu> Paper Texture>** *desired texture*.

To clear a paper texture:

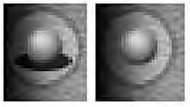
- Choose **Display menu> Paper Texture> None**.

Drop Shadows

Figures in the studio cast drop shadows directly on the ground plane. Shadows can help you orient a figure in 3D space. You can turn shadows off to save on redraw time.

To turn drop shadows on or off:

- Click the Display Shadows button on the right side of the Document window.



The Display Shadows option button.

Note

Drop shadows are not actually shadows cast by a light; they always appear directly beneath an object on the ground floor. Shadows cast by lights appear only when a scene is rendered. Refer to "Rendering" on page 259 for details.

Placing Figures and Elements in the Studio

The main working area of the Poser Workspace is the studio in the Document window. The figure that appears in the studio is determined by the model you load from the Figures category of the Libraries palette, or from a document or import. The Libraries palette is the main tool you'll use to load figures and props.

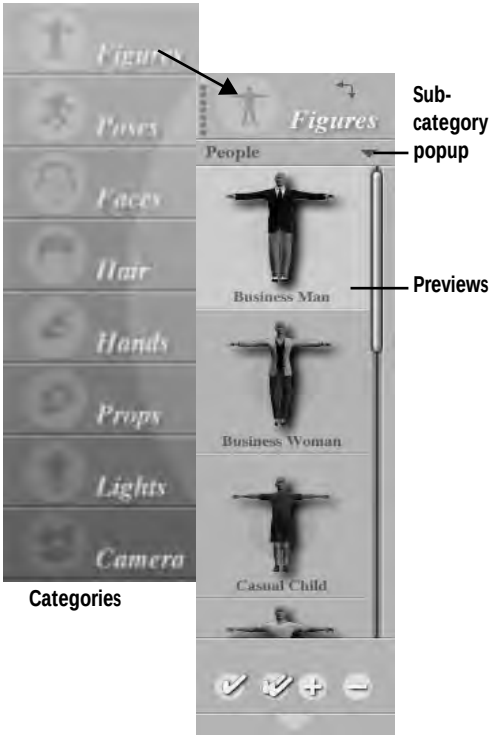
Using the Libraries Palette

The Libraries palette provides access to all the preset figures, props, light sets, and camera sets available in Poser. The content of the libraries palette is divided into eight categories.

Each category includes sub-categories. For example, the Figures category includes the subcategories People, Animals, Poser2 figures, etc. Each sub-category contains figures to choose from.

Note

Some figures are more posable than others. The People sub-category of the Figures category give you more control over hands and faces. Poser 2 figures have less control.



The Libraries palette divides the available content into categories. Each category palette provides previews.

Once you load a figure into your studio from the library, you can customize it and save it back to the library for future use.

To display the Libraries palette:

- Click the handle on the right side of the screen.

  or

  Choose **Windows menu> Libraries**.

To resize the Libraries palette:

- Drag the palette's handles up or down. Release the mouse when the palette is the desired height.

Loading from the Libraries Palette

Loading content is a matter of selecting a category, a sub-category, and then a specific item. The Libraries palette makes these selections easy. It displays categories using descriptive button icons and provides previews of each item.

To choose a category:

1. Click a category button.

   If all the icons are not visible, move your cursor over the small dots next to the category icon, or click on the current category.

Move your cursor over the small dots next to a category icon to cycle through all the available categories.

2. When the desired category icon appears, click the mouse button.

To choose a sub-category:

- Click the arrow icon below the category icon and choose an item from the popup.

  The content within the selected category appears in the main body of the palette.

To change or add an item to the studio:

1. Click the category of content (such as Figures or Props) you want to use.
2. Choose a sub-category from the popup.

   If you select a figure, pose, or body part, it will replace the current figure content in the studio. If you select a prop, it will be added to the scene.
3. Click a preview in the main body of the palette. If the figure you want is not displayed, use the scroll bar to view additional previews.
4. Click the Change Figure icon at the bottom of the palette.

The Change Figure icon.

The Create New Figure icon is only available in the figures category, so that you can add additional figures to the studio.

To add an additional figure to the studio:

1. Click the content category you want to use.
2. Choose a sub-category from the popup.
3. Click the preview of the figure you want to add to the studio.
4. Click the Create New Figure icon at the bottom of the palette.

The Create New Figure icon.

Saving to the Libraries Palette

In the Libraries palette, you can create your own set of customized figures and poses, which you can easily retrieved and use in other illustrations. You can save custom camera and light configurations, poses, and figures to the library.

When you save an item to the Libraries palette, you create a new set within the currently selected sub-category.

You can either save an item to an existing sub-category, or create a new sub-category for your item.

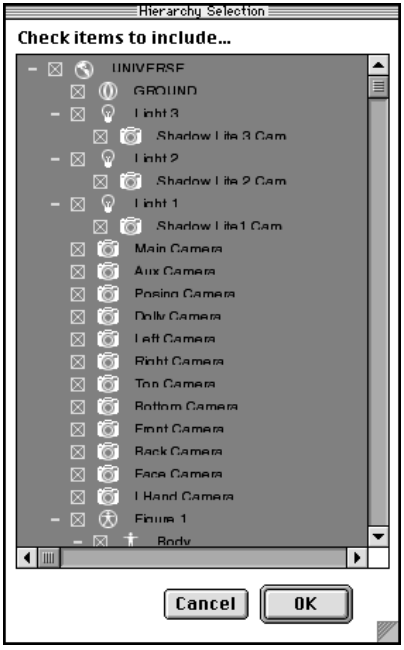
To create a new sub-category:

1. Click the category of content where you want to add a new sub-category.
2. Click the sub-category popup and choose Add category. The New Library dialog appears.
3. Enter a name for your new sub-category and click OK.

   Your new sub-category appears at the end of the menu.

To save an item to a library:

1. Click the content category you want to save to. For example, if you want to save a pose, click the Poses category.
2. Choose a sub-category from the popup.
3. Click the Add to Library (+) icon at the bottom of the palette. A dialog appears.
4. For the Poses, Faces, Props, Lights, and Cameras categories, you can specify parts of the scene to include or not include. To do this, click the Select Subset button. In the Hierarchy Selection list that appears, deselect any items in the scene that you don't want to include, then click OK.



The Hierarchy Selection list.

5. Enter a name for your library item and click OK.

6 A dialog appears asking if you want to save a Single frame or a multi-frame animation.

You can save a still or the entire animation.

- If you select the Single frame option, the current pose is saved, or if you have an animation set up, only the current frame is saved.
- If you select the Multi-frame animation option, you can specify a range of frames to save.

Select either Single frame or Multi-frame animation and click OK.

The item is added to the selected category.

To delete an item from the library:

1 Select the preview of the item you want to delete.

2 Click the Delete from Library (-) icon at the bottom of the palette.

Note

This command permanently deletes items from the library; make sure you really want to delete the item before accepting the message in the warning dialog.

Deleting Objects from a Scene

At some point you may wish to delete one or more of the figures and props you have added to the studio.

To delete a figure or prop from the studio:

1 Select the figure or prop you want to delete from the Current Figure or Current Element popup.

2 Press Delete.

Note

You cannot undo this delete command.

You can also delete items using the Hierarchy Editor. For details, refer to "Deleting Objects" on page 292.

Working in the Document Window

Viewing Your Figure

The camera position determines your view in the Document window. The Camera Controls let you quickly move the camera to different positions as you pose your figure.

Use the Camera Controls to change the view of your figure.

You can move the camera in any direction within the studio. However, positioning it can be an involved process. This section outlines how to quickly move the camera to the most commonly used positions. For more detailed instruction on positioning the cameras, refer to "Changing the Studio View" on page 181.

The available cameras are: Main, Auxiliary, Left, Right, Top, Bottom, Front, Back, Right Hand, Left Hand, Face, Posing, Dolly, and Flyaround View.

To select a camera view:

- Drag the cursor over the Select Camera control, until the desired Camera view appears.

  or

  Click the Select Camera popup and choose the desired view.

To switch to the face camera:

- Click the Face Cam icon at the top of the Camera controls.

or

Click the Select Camera popup and choose Face Camera.

To switch to a hand camera:

- Click either the Left or Right Hand Camera icons.

or

Click the Select Camera popup and choose either Right Hand or Left Hand Camera.

To view the entire figure:

- Click the Select Camera popup and choose Main Camera or Posing Camera.

Flyaround View

In Flyaround view, Poser places the camera on a virtual track above and away from the center of the studio. Thus, the camera circles the entire studio, displaying all the objects within it from various views. This is an excellent way to see how a figure pose looks within 3D space.

To activate flyaround view:

- Click the Flyaround View icon.

or

Click the Select Camera popup and choose Flyaround View.

Saving Camera Positions

You can quickly move between views of the studio by saving your most commonly used views into the Camera Memory dots. This makes it easy to recall a view with a simple mouse click.

To save a camera position:

1. Position the camera as desired.
2. Click the Memory dots popup and choose Camera dots.
3. Click an empty memory dot.

Previewing Your Figure

The Document Display Style determines how a figure is displayed in the Document window. Different display styles have different purposes. Some save on memory, while others can be used to make positioning easier.

To choose a display style:

- Click one of the style icons in the Display Style controls.

Click a Display Style icon to switch to a different display style.

or

Choose **Display menu> Document Style>** *desired display style.*

The following display styles are available:

Silhouette displays figures only as a cutout.

An example of Silhouette style.

Outline displays only the outline of the figure.

An example of Outline style.

Wireframe displays figures and objects as a mesh.

An example of Wireframe style.

Hidden Line displays figures and objects as a mesh, but portions of the mesh not is the cameras field of view do not display.

An example of Hidden Line style.

Lit Wireframe displays figures and objects as a colored mesh, where the color of a section of mesh corresponds to the color of the surface material.

An example of Lit Wireframe style.

Flat Shaded displays figures and objects with a colored surface, where the mesh facets are clearly visible.

An example of Flat Shaded style.

Flat Lined displays figures and objects as a colored flat shaded surface, covered by a black mesh.

An example of Flat Lined style.

Cartoon displays figures using a hand-drawn style.

An example of Cartoon style.

Cartoon w/Line displays figures using a hand-drawn style with black outlines.

An example of Cartoon w/Line style.

Smooth Shaded displays figures and objects as a smooth continuous surface.

An example of Smooth Shaded style.

Smooth Lined displays figures and objects as a smooth shaded surface, covered by black mesh lines.

An example of Smooth Lined style.

Texture Shaded displays figures and objects using texture mapping.

An example of Texture Shaded style.

All styles except Silhouette, Outline, Wireframe, and Hidden Line are affected by lighting changes.

You can apply a Display Style to a figure, the entire document, or a specific body part. Different styles can save on redraw time and help you isolate specific body parts while you're working. Cartoon w/Line, Flat Lined, and Smooth Lined styles are slower than their non-lined counterparts.

To apply a display style to the entire document:

- Click the popup next to the Display Style icons and choose Document Styles.

To apply a display style to the entire figure:

- Click the popup next to the Display Style icons and choose Figure Styles.

To apply a display style to an element:

- Click the popup next to the Display Style icons and choose Element Styles.

The figure is shown in wireframe style, while the hand (an element) is shown in smooth shaded style.

When you assign a Figure or Element style, an additional display style control, an upward arrow, appears. With this control, you can quickly reset elements with different display styles to the Figure's display style, or figures with different styles to the Document's display style. In the above example, to reset the hand to match the figure's wireframe style, select the hand, then click the arrow icon.

Click the arrow button to switch the element to the figure display style, or the figure to the document display style.

Figure Properties

You can control several behavior options for figures in the Figure Properties dialog.

To change options for a figure:

1. Click the Figure menu under the Document window and choose the figure you want to work with.
2. To select the entire figure, choose Body from the Current Element popup.
3. Choose **Object menu> Properties.** The Properties dialog appears.

The options in the Figure Properties dialog are:

- **Name**: rename the figure. Giving your figures descriptive names can make it easier to locate them in the Current Figure popup, Animation palette, and Hierarchy Editor.
- **Visible**: toggle the figure visible or invisible. Visibility is global to the file. In an animation, you cannot make a figure visible in one frame, but hidden in another.

Element Properties

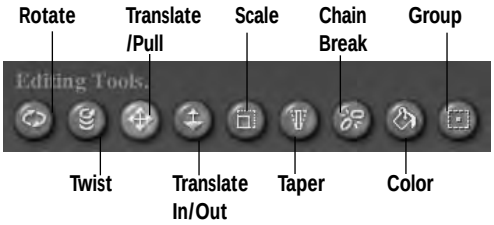
You can control several behavior options for body parts in the Element Properties dialog. You can rename parts, make them invisible, and control whether they cast shadows or not.

To change options for a body part:

1. Click the Figure menu under the Document window and choose the figure you want to work with.
2. Choose a specific body part from the Current Element popup.
3. Choose **Object menu> Properties.** The Properties dialog appears.
4. Set any of the following options in the Element Properties dialog:
   - **Name**: rename the part.
   - **Visible**: toggle the part visible or invisible. In an animation, you cannot make an element visible in one frame, but hidden in another.
   - **Casts Shadow**: toggle shadow casting for the part.
   - **Bend**: toggle the part bendable or not. For details, refer to "About Bending" on page 127.
   - **Add Morph Target**: add a custom morph target to the part. For details, refer to "Adding Custom Morph Targets" on page 156.
5. Click OK to close the dialog.

Using the Editing Tools

Poser includes several Editing tools for manipulating figures, objects, lights, and cameras.



The Editing Tools allow you to manipulate figures, objects, lights, and cameras.

To change the Editing toolbar's orientation:

- Option/Alt-click the Editing toolbar. The orientation toggles between horizontal and vertical.

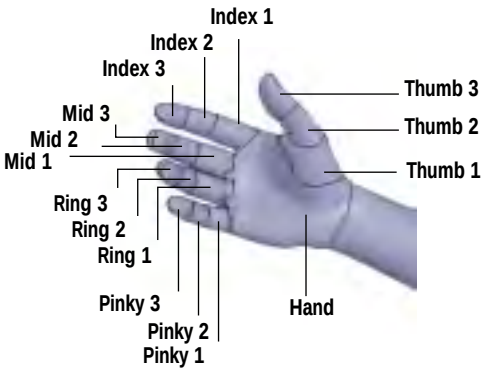
Editing Tools are discussed throughout this book:

- For information on the Rotate, Twist, Translate, and Chain Break tools, refer to "Using the Editing Tools" on page 114.
- For information on the Scale, and Taper tools, refer to "Using the Shaping Tools" on page 140.
- For information on the Color Tool, refer to "Using the Color Tool" on page 139.
- For information on the Grouping Tool, refer to "Using the Grouping Tool" on page 157.

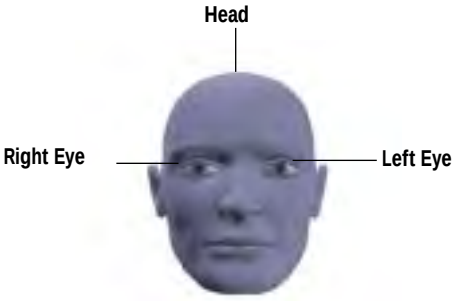
Selecting Body Parts

Before you start posing a figure, you need to know how to select the part of the figure you want to move. You can select a body part with an Editing Tool or from the Current Element popup located beneath the Document window.

The Figure's body parts are posable elements.



Posable hand elements. The Right and Left hand have the same elements.



Posable face elements. Pose face features using Parameter Dials.

Body parts are highlighted as you move the cursor over them.

To select a body part using an Editing Tool:

1. Click one of the Editing Tools.
2. Click a body part on the figure.

   The selected body part is highlighted in the Document window and the name appears in the Current Element popup menu.

To select a body part using the menus:

- Click the Current Element popup located beneath the Document window and choose the desired body part from the menu.

Pasting Figures onto the Background

At any point, you can paste an image of the figure onto the studio background. When you choose this command, the current view of the figure becomes part of the background bitmap.

At first glance, you might not notice the affects of applying this command. This is because the figure itself blocks the background-pasted image. However, any changes you make—such as moving the figure or camera—reveal the background image.

To paste the figure onto the studio background:

1. Choose **Display menu> Paste onto Background**.
2. The figure is pasted over the background image.

To clear the background:

- Choose **Display menu> Clear Background Picture**.

Hiding Figures

Hiding a figure makes it temporarily disappear from the Poser studio. This feature is useful when you have two figures close together, and one gets in the way when you try to select the other.

To hide a figure:

1. Click the Current Element popup and choose Body.
2. Choose **Object menu> Properties**. The Figure Properties dialog appears.
3. Disable the Visible option.

To hide a figure when you have two or more figures:

1. Click the Figure popup and choose the figure you want to hide.
2. Choose **Figure menu> Hide Figure**.

   This command is only available when you have more than one figure in the studio.

To display a hidden figure:

- Choose **Figure menu> Show All Figures**.

Displaying Guides

Poser provides several guides to assist you in posing figures. Guides help you achieve a particular perspective more easily. The guides Poser offers are a ground plane, horizon line, vanishing lines, the hip-shoulder relationship, and head lengths.

To display a guide:

- Choose **Display menu> Guides** and select the guide you want.

To hide a guide:

- Choose **Display menu> Guides** again and de-select the guide.

Ground Plane

The ground plane is a basic reference of the camera's perspective on the studio. As you rotate the camera, the ground plane can help you infer the camera's current position.

The display style of the ground place can be the same as the document or figure, or it can have its own element display style. Using the Wireframe style, the ground plane is a grid. Using the Flat Shaded display style, the ground plane is a solid color. When tracking or moving, the ground plane is displayed in Wireframe.

The ground plane, shown in wireframe display.

Head Lengths

The head lengths guide references the figure's height. You may want to use this guide when body shaping.

Horizon Line

The horizon line provides a reference to the studio's horizon. When you use the x, y, and z orbit controls to move the camera, you can see how far you've gone by checking the horizon line.

The horizon line is especially helpful in creating perspective between two figures when one figures is in the distance. Arrange the figures in the same relationship to the horizon line.

For example, if the horizon line crosses at the center of the front figure's chest, arrange the distant figure so that the horizon crosses its chest at the same position. This arrangement contributes to the sense that all figures have their feet on the ground.

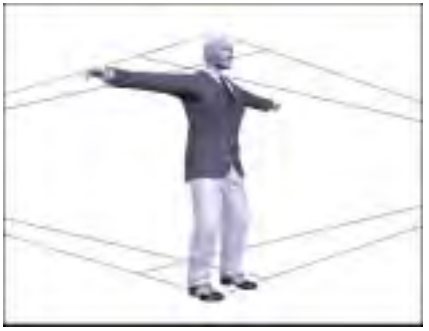
Figures arranged in relation to the horizon line.

Hip-Shoulder Relationship

The hip to shoulder relationship shows the alignment between the figure's upper and lower body. This guide helps you see the side-to-side, bend, and twist in the hip, abdomen, and chest. To see a particular aspect, try a different camera view.

Vanishing Lines

Vanishing lines are an artistic technique for achieving realistic perspective. In Poser, the vanishing lines guide provides a reference of the perspective.Vanishing lines are helpful when matching the view of the figure with the perspective in a background image.



The vanishing lines guide.

Undoing Operations

You can reverse the effects of your last action using the Undo command.

To undo an operation:

- Choose **Edit menu> Undo** or, press Command/Ctrl+Z.

Note

Not all operations can be undone.

Restoring Default Settings

You can restore the default settings for a body part, figure, lights, or camera. Restoring the lights resets their colors and positions. Restoring the current camera reset its scale, position, and focal length. Restoring All resets all figures, cameras, and lights.

To restore an object to its default setting:

1. Select the item from the document window or the Current Element popup.
2. Choose **Edit menu> Restore>** *the item you want restored*.

Changing Defaults

Poser uses default settings to set up a new document. As you work, however, you may achieve a position that you'd prefer over the default.

To change Poser defaults:

- Choose **Edit menu> Memorize>** *the element you want to memorize*. The new setting applies only to the current file.

Printing

The Print command sends the contents of the Document window to your selected printer.

When printing, Poser always prints to the full page size.

Note

When in Wireframe display style with a black background, Poser automatically inverts the colors to prevent printing a large black background.

Importing and Exporting

Importing Content

Use the Import commands to bring the contents of other files into the current document. You can import figures, props backgrounds, surface materials such as texture and bump maps, sounds, and animations.

Importable file formats include PICT (Macintosh), TIF, JPEG, and BMP files for backgrounds or surface materials. You can import saved Poser documents for figures and props. And you can import QuickTime (Macintosh), MetaStream, VRML, and AVI (Windows) files for background footage in animations.

You can import prop geometry files in DXF, BVH, 3DMF, Wavefront OBJ, 3D Studio (Windows), and Painter3D (Detailer) formats. For details on importing props, refer to "Importing Props" on page 166.

Note

If you import a prop with textures, place the textures in the **Poser:Runtime:Textures** folder.

If you import a Poser document that contains more than one figure or prop, Poser imports all of them.

To import a file:

1. Choose **File menu> Import>** *file type*.
2. Select the file you want to import in the resulting dialog.

Exporting Files

You can export the contents of the Document window to an image file at any time, from any display style. You may do this to save the wireframe image of a figure.

The exported image includes the highlighted body part and any currently displayed guides. If you don't want to export these, deselect the figure and hide the guides before exporting.

You can export the geometry contents of a Poser file in other formats, which you can transfer to a 3D graphics program. Transferable formats are: OBJ, 3D Studio, Detailer, DXF, RIB, Wavefront, 3DMF, and VRML/H-Anim formats.

Note

For file format plugin updates, check the Poser section of the MetaCreations web site: www.metacreations.com.

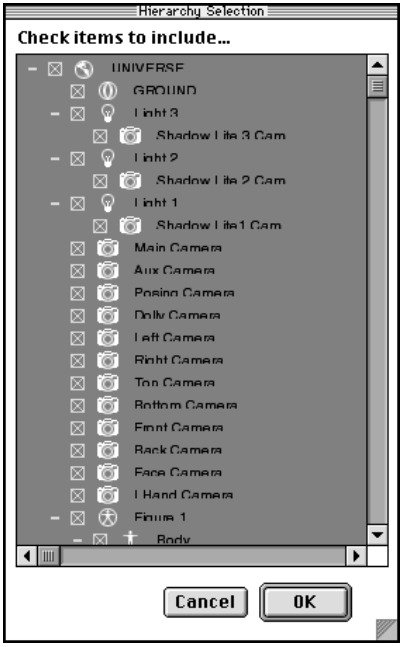
To export a file:

1. Choose **File menu> Export>** *file type.*
2. A dialog appears asking if you want to save a Single frame or a multi-frame animation.

You can save a still or the entire animation.

   - If you select the Single frame option, the current frame is exported.
   - If you select the Multi-frame animation option, you can specify a range of frames to export.

   Select either Single frame or Multi-frame animation and click OK.
3. In the Hierarchy Selection list that appears, uncheck any items that you do not want to be included in the export, then click OK.



The Hierarchy Selection list.

4. In the Export dialog that appears, specify a filename and location and click Save.

Saving and Closing

To save a Poser file:

1. Choose **File menu> Save**. The Save dialog appears.
2. Choose a name and location for your file and click Save.

To save a Poser file under a different name:

1. Choose **File menu> Save As**. The Save As dialog appears.
2. Choose a new name and location for your file and click Save.

To close the application:

- Choose **File menu> Quit/Exit**.


THE DASTARDLY DR. PLANE IS HATCHING ANOTHER PLOT.
"MY DEMENSO-RAY WILL RID THE WORLD OF ALL THIS MESSY DEPTH."
GREAT SCOTT ANNA, WHAT'S HAPPENING DOWN THERE?
I DON'T KNOW KARL, BUT WE BETTER GET OUT OF HERE OR IT'LL HAPPEN TO US AS WELL!
BOOM
QUICK THINKING SAVES THE PAIR FROM A 2D DEMISE.
"AT LAST! EVERYTHING IS FLAT AND NEAT!"

3

Tutorial

Welcome

Welcome to the Poser 4 tutorial. This tutorial is designed to introduce all the major features and functions in Poser. Its main goal is to teach you the techniques you need to know to create realistic poses and animations.

This Tutorial chapter is divided into two sections:

- The Basics, which contains a basic tutorial to help you get started using Poser.
- Advanced Tutorials, which lead you through figure modification and animation.

The Basics

The following set of lessons is designed to help you learn the basic operations in Poser 4. They cover topics such as setting up your workspace and working with posing tools.

Lesson 1: Setting Up a Default Workspace

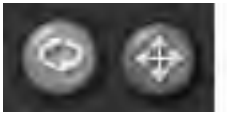
When you first open Poser 4, you see the palettes and toolbars in their default position. You can change these positions, hide elements, and save the new positions as a Preferred State. The new arrangement appears the next time you open the application.

The default Poser 4 workspace.

The default figure in the Document window is a Poser 3 figure. You can delete this figure and set up a new default figure as part of the Preferred State.

To delete the default figure:

1. Select either the Rotation Tool or Translate Pull Tool.



The Rotation and Pull tool are the most commonly used posing tools.

2. Click any part of the figure in the Document Window.

   The selected part appears outlined in red.

A figure with a selected part.

3. Press the Delete key.

   A dialogue box appears asking you to confirm the figure deletion.

4. Click OK.

   You should now have a blank document.

To set up an new default figure:

1 Choose **Windows menu> Libraries**.

The Libraries palette appears. From top to bottom the Library categories are: Figures, Poses, Faces, Hair, Hands, Props, Lights and Cameras.

The Libraries palette.

2 Click the Figures button.

The Figure button.

3 Click the sub-category menu and choose People.

4 Drag the scroll bar on the right side of the Library palette until the Casual Woman appears. All Library Entries are listed in alphabetical order.

The Casual Female in the Libraries palette.

5 Click the Casual Female, then click the Add Figure icon at the bottom of the palette.

The Add Figure icon.

You should now see a bald woman wearing casual clothing in your document window.

The Casual Female in the Document window.

To add hair to a figure:

1 Move your cursor to the top of the Libraries palette. You'll notice that there are several dots running down the left side of the palette.

The category dots at the top of the Libraries palette.

2 Move the cursor over each dot. The titles change to show you the various libraries available.

The Library dots enable you to change libraries by clicking the correct dot. Clicking a large category button takes you back to the main category buttons.

3 Click the fourth dot from the top to display the Hair Library.

The Hair category dot.

4 Scroll down until you see Female Hair 1.

Here, as in the Figure Library, all files are listed in alphabetical order

The Female Hair 1 in the Libraries palette.

5 Click on Female Hair 1, then click the Change Figure icon at the bottom of the Library palette.

Your figure now has hair.

The Casual Female with hair.

Once the figure is loaded into Poser, you should set it as your Default Figure so that it loads every time you open Poser or create a new document. You can also save any changes you made to tools positions or the Document window.

To make your new figure the default:

1. Choose **Edit> General Preferences**.

   The Preferences dialog appears.

2. Enable the Launch to Preferred State option in the Document Preferences section of the dialog.

3. Enable the Use Previous State option under the Interface Preferences section.

4. Click the Set Preferred State button.

   This saves the current document to the Preferences.

5. Click OK.

Poser loads even faster if you save an empty document as the Preferred State.

Lesson 2: Working with Cameras

You can access the cameras in Poser in several different ways. An often overlooked method of selecting a camera is by using keyboard keys. Learning a few key commands can make viewing a figure much easier.

There are two types of cameras in Poser: Conical and Isometric. Conical cameras (such as the Main, Hand and Face cameras) act like real-world cameras in that they display perspective. Isometric cameras (such as From Top, From Left, etc.) have no perspective. When you view figures using Isometric cameras you won't be able to rotate around the studio.

Each camera has its own *center*; it centers on and rotates around an object. For example, the Right Hand camera rotates around the Right Hand, and the Face camera rotates around the face. Both cameras face the center directly unless you intentionally redirect them.

Refer to "Cameras" on page 177 for more on cameras.

In this lesson you'll explore the posing studio using the various cameras.

To view your figure using the Main camera:

1. Hold down the Command/Ctrl-M. The view switches to the Main Camera.

The view from the Main camera.

2 Move your cursor over the Trackball in the Camera Controls palette.

The Trackball in the Camera Controls palette.

3 Drag from left to right over the Trackball. Then drag from right to left.

The new view of the studio.

You'll notice that the Main camera points at the center of the studio. You can change this default behavior by linking the camera to an object in the studio.

To link a camera to an object:

1 Make sure that the Main camera is the currently selected object.

Check Current Element menus beneath the Document Window. It should list Figure 1 and Main Camera. If not, click the menu and select the Main Camera.

2 Choose **Object menu> Point At**.

The Choose Actor dialog appears.

The dialog shows a visual list of all the objects in your scene.

Scroll down until you see the Head element.

3 Click Head in the list and click OK.

The Main camera now points at the Head. Note the new Parameter dial called Point At appears at the top of the list of dials.

The view of the studio with the Point At behavior applied.

4 Move your cursor over the Move X and Y tool on the Cameras palette and drag

down until the camera moves behind the figure.

The new view of the studio.

No matter where you move the camera, the Head remains in the view.

With the Point At behavior the camera always points at the target object, without changing its position.

By changing the camera's parent, you can automatically move the camera whenever you move the figure.

To change a camera's parent:

1. Choose **Object menu> Change Parent**.

   The Choose Parent dialog appears.

2. Choose Body from the list.

3. Click OK.

The new view from the Main camera using Body as its parent.

4. Press Command/Ctrl-T to switch to the Top camera.

The view of the studio from the Top camera.

5. Click the Translate tool.

6. Select the figure ring around the Body and move it anywhere in the Document

window. Do not click directly on the body or you will alter the pose.

The repositioned Body.

7 Press Command/Ctrl-M to switch back to the Main camera

The view of the studio from the Main camera.

Notice that the view from the Main camera remains the same. That's because the camera moved with the Body when you repositioned it.

Try moving the figures body again using another camera and switch back to the Main camera. The Main camera returns to the same position.

To view the figure using the Face camera:

1 Press Command/Ctrl-(=) to switch to the Face Camera.

The view from the Face camera.

2 Drag left over the Trackball.

Notice that Face camera always stays with the selected figure, no matter where you move the figure.

The Face Camera is ideal for making animations that center on a single figure.

To view the figure using the Top camera:

1 Press Command/Ctrl-T to switch to the Top camera.

The view of the studio from the Top Camera.

The Top camera, like the Left, Right and Front cameras, is an Isometric camera, meaning that doesn't show perspective.

It is designed specifically for viewing a pose rather than rendering poses. This camera is very useful for placing figures, creating animations, and locating Figures and Spotlights you may have lost in the studio.

2 Set the Top camera Scale Parameter Dial to 400% or more to get a wide view of the Poser 4 studio.

The expanded view of the studio.

A Note on Focal Lengths

Poser's default Cameras are set to 25mm and have all the attributes of a real-world 25mm Wide Angle Lens. You can experiment with other focal lengths such as 50mm, which resembles the human eye's view, and 100mm, a lens favored by Portrait Photographers.

Each time you set the focal length, the Scale will also reset. Scaling Down from 100% to 25% zooms in, while scaling up from 100% to 1000% zooms out.

Lesson 3: Tracking Modes

A tracking mode determines how the figure looks as you move it. Fast Tracking mode displays the figure as boxes during movement. Full Tracking displays a fully rendered figure during movement.

Tracking modes help you overcome the limitations of your computer's processing speed when posing. Faster computers can display better tracking, while slower machines benefit from less complex modes.

In this lesson you'll learn how to choose a tracking mode.

To set a tracking mode:

1. Click one of the Tracking modes icons located on the upper right hand side of the Document window.

The Tracking mode icons.

   From the top to bottom they are: Box Tracking, Fast Tracking, and Full Tracking.

2. Click each of the mode icons and adjust the figure's pose. Observe how different modes affect response time.
3. Use the mode that doesn't slow down your computer's response time.

Lesson 4: Document Display Styles

Document Display Styles in Poser have special purposes for artists, animators, and hobbyists.

In this lesson you'll explore different styles by applying them to your figure.

To apply the Silhouette style:

1. Choose **File menu> New**.
2. Press Shift-Command/Ctrl-X to switch to Fast Tracking.
3. Press Command/Ctrl-1 to switch to Silhouette style.
4. Press Command/Ctrl-Option/Alt-R to Anti-Alias the document.

A figure using the Silhouette style.

   The Silhouette style is useful for creating masks of rendered figures, which can be used in programs s like Metacreations Painter.

To switch to Outline style:

- Press Command/Ctrl-2 to switch to Outline style.

A figure using the Outline style.

Outline is the fastest display style. You can pose the figure while maintaining your view of the exact position of its parts in the Document window. It is the least taxing style on hardware resources.

To switch to the Wireframe style:

- Press Command/Ctrl-3 to switch to Wireframe style.

A figure using the Wireframe style.

Wireframe Mode lets you see the movement in a figure's mesh.

For power users, it's an excellent style for watching how Morph Targets and Joint Parameters interact, especially on custom figures.

To switch to Hidden Line style:

- Press Command/Ctrl-4 to switch to Hidden Line style.

A figure using the Hidden Line style.

Hidden Line shows only the camera side of the mesh. Use this mode to see a simplified view of mesh movement.

To switch to Lit Wireframe style:

- Press Command/Ctrl-5 to switch to Lit Wirefame.

A figure using the Lit Wireframe style.

The Lit Wireframe style colors the mesh based on the color of the surface material.

To switch to Flat Shaded style:

- Press Command/Ctrl-6 to switch to Flat Shaded.

A figure using the Flat Shaded style.

Flat Sided shows all facets of the mesh in a rendered style. This style is slightly faster than Smooth Shaded.

To apply the Smooth Shaded style:

- Press Command/Ctrl-8 to switch to Smooth Shaded.

A figure using the Smooth Shaded style.

The default style in Poser lets you see the colored and smoothed mesh form. It is an efficient style for all around utility.

To apply the Texture Shaded style:

- Press Command/Ctrl-9 to switch to Texture Shaded.

A figure using the Texture Shaded style.

This style lets you preview the texture mapped figure.

To apply a Lined styles:

- Choose **Display menu> Document Style>** *Flat Lined* or *Smooth Lined*.

A figure using the Smooth Lined style.

These styles produce color shaded representations of a model with a mesh wireframe overlaid on the surface.

In addition to being able to see the mesh, these styles can be are useful to those adept at creating custom texture maps for their models.

To apply a Cartoon style:

- Choose **Display menu> Document Style>** *Cartoon W/Line* or *Cartoon*.

A figure using the Cartoon style.

These styles are designed with the artist in mind. Also, the new Cartoon style makes it easier to create complex masks in programs like Metacreations Painter or Photoshop.

Working with Lights

Lights are one of the most necessary and least understood part of any 3D Program. Often they're difficult to use. Poser's remedy is a unique Light Controls palette that lets you intuitively manipulate lights.

There are two types of lights in Poser: Infinite and Spotlights. To use them effectively, you first need to understand the differences between the two. Infinite light illuminates one side of everything in the scene in the same way sunlight does. Spotlights point in a single direction and illuminate everything that falls with in the cone of light they produce. Poser uses Infinite lights by default.

Lesson 1: Using the Light Control

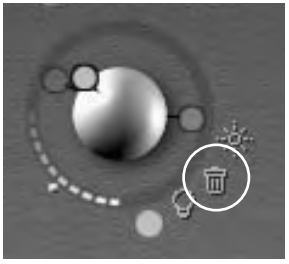
You'll begin this lesson by deleting two of the three default lights in the Poser scene and learning the controls.

To use the Light controls:

1 On the Light Controls palette, select the circle for the light you want to delete.

Each light in the studio is represented by a circle on the Light Control. This example shows a selected light.

2 Click the Delete Light icon.



The Delete Light icon.

The selected light is deleted.

3 Select another light and repeat step 2.

4 Select the remaining light.

5 Drag over the control from left to right.

The Light Ring in the Document window.

Note how the Light Indicator (representing the global light) revolves around the figure. The arrows off the indicator show the direction from which the light comes.

Tip

You can use the Rotate Tool to manipulate the Light Indicator directly in the Document window.

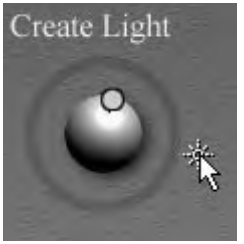
The Light Intensity slider on the Light Control has a range from 0% to 100%. It acts as the brightness control, or dimmer. The midway point of the slider is 75%.

The Parameter Dials also let you control some of the light's properties. Refer to "Light Properties" on page 191 for more on lights.

Next you'll add a spotlight to the studio.

To add a spotlight:

1 Click the Create Light icon.



The Create Light icon.

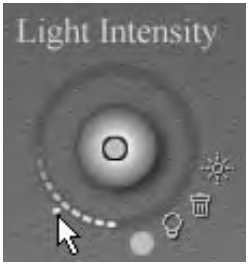
2 A new light appears on the Light Control.

The new light indicator on the Light control.

3 Drag the new light's circle to locate it approximately front and center. This places the light in front of the figure.

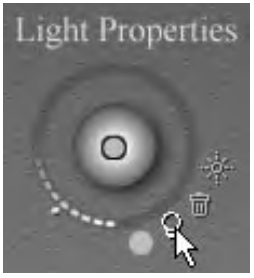
The position of new light on the Light Control.

4 Set the Light Intensity slider to approximately 75%, or the middle of the slider.



The Light Intensity slider set to 75%.

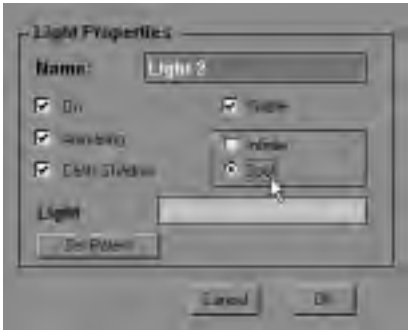
5 Click the Light Properties icon.



The Light Properties icon.

The Light Properties dialog appears.

6 Enable the Spotlight option.



The Spotlight option on the Light Properties dialog.

You now have a new spotlight, you can control how it behaves by applying the Point At function to it.

To apply the Point At behavior to a light:

1 Make sure your new spotlight is the selected element.

2 Choose **Object menu> Point At**.

The Choose Actor dialog appears.

3 Choose Head from the Select a Scene Element list.

4 Set the yTrans Parameter dial to between 0.900 and 1.000.

5 Set the zTrans dial -1.0.

The Spotlight's Indicator moves out from behind the camera to behind the figure. Notice how it always remains pointed at the Head.

The Spotlight's indicator in the Document window.

6 Adjust the values of the x, y or zRotate Parameter dials.

You'll notice that the Spotlight doesn't rotate like an Infinite light. Infinite lights

rotate around the center of the studio. Spotlights rotate around the center of the light object.

Using Poser's Tools

The lessons in this section teach you how to work with the most commonly used Posing tools and the Parameter Dials.

Lesson 1: The Parameter Dials

The simplest way of posing a figure is by selecting each individual part, and using the Parameter Dials to move it into the desired position.

A much faster way of posing is to use the four main posing tools directly on the figure in the Document window. However, this method requires considerable practice.

This lesson leads you through the process of posing a figure using the Parameter Dials.

To pose by typing in numerical values:

1 Click the Translate/Pull tool.

The Translate/Pull tool.

2 Select the Right Shoulder in the Document window.

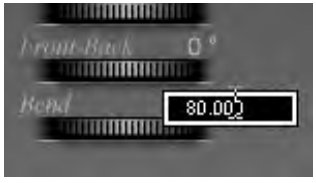
The Right Shoulder selected on the figure.

A series of parameter dials appear.

3 Click the value on the Bend dial.

The Bend dial.

4 Type 80 in the field that appears.



The Bend dial.

The whole right arm should now be at the figure's side.

The new position of the right arm.

To pose using the dials:

1 Select the Left Shoulder

The left shoulder selected.

2 Select the Bend Dial

3 Drag the dial right to left until the value shown is at or near -80.

The left arm should be at the figure's side.

The new position of the left arm.

Notice that for the left shoulder, the downward bend value is negative, for the right shoulder, the value is positive. This is generally true when working with a figure; left is negative and right is positive. Try this with the Front-Back dial on both shoulders.

Lesson 2: The Rotate Tool

The Rotate tool is probably the most useful tool for directly manipulating your figures. Unlike the Translate tools, it only affects the individually selected part,.

In this lesson you'll use the Rotate tool on the Forearms.

To pose using the Rotate tool:

1 First, switch to the From Left camera by pressing Command/Ctrl-(;). This makes rotating easier.

Note

Becoming used to quickly changing cameras makes posing a much simpler task

You are now looking at the figure's right side.

2 Click the Rotate Tool.

The Rotate tool.

3 In the Document Window, select the Right Forearm.

The selected Right Forearm.

4 Place the cursor directly over the selected forearm and drag to the right until it is extended in front of the figure.

Drag to the right until the arm is in the position shown.

5 Press Command/Ctrl-(') to switch to the From Right Camera.

You're now looking at the left side of the figure.

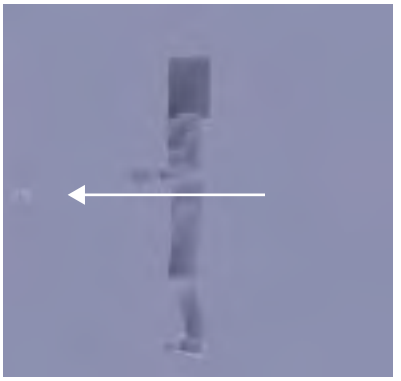
The figure shown through the From Right Camera.

6 Select the Left Forearm with the Rotate tool.

The selected Left Forearm.

7 Place your cursor behind the figure and drag to the left.

The Forearm bends up.



Drag left until the forearm is in the position shown.

8 Place the cursor to the left of the figure and drag up. The Forearm follows.

Drag up until the forearm is in the position shown.

Now you have used two methods of working with the Rotate Tool. You can use the tool directly on the selected part, or you can drag the tool across the workspace and the part will follow. This is true of all four main Posing tools: Rotate, Twist, Translate/Pull and Translate In/Out.

Lesson 3: The Twist Tool

The Twist Tool does exactly what its name implies, it twists body parts. This is accomplished by selecting the part and drawing the tool across the screen. It is an extremely useful tool for creating realistic poses quickly.

To use the Twist tool:

1 First, press Command/Ctrl-M to switch back to the Main Camera.

The figure shown through the Main Camera.

2 Select the Twist tool.

The Twist tool.

3 Move your cursor over the faint circle that surrounds the figure. When you're directly over it, the circle turns white.

4 Click and hold the highlighted circle; it turns red.

A figure with the Figure ring highlighted.

5 Move your cursor to the left side of the Document window and to the right until you see the figure at a three quarter face.

Check the yRotate dial value. It should be at about 45 degrees.

The rotated figure.

6 Select the Hips with the Twist tool.

The Hips selected with the Twist tool.

7 Drag to the left until the figure is once again directly facing the camera.

8 Select the Neck and drag to the left.

The Twist dial should be near -16 degrees.

The selected Neck.

9 Select the Head and drag to the left.

The Twist dial should be near -16 degrees.

The final position of the Head.

Lesson 4: The Translate and Chain Break Tools

The Translate/Pull, In/Out and Chain Break tools are some of the most powerful direct posing tools available to you. Used together, they can quickly generate any pose. Once you have a pose, you can then fine-tune the pose using the Parameter Dials. In this lesson, you'll explore posing using just these three tools.

To pose using the Translate/Pull tool:

1 First, save anything you wish to keep from the last tutorial, and create a new document (**File menu> New**).

2 Select the Translate/Pull tool

The Translate/Pull tool.

3 In the Document window, select the Hips.

The selected Hips.

4 Drag up to lift the figure.

Drag up until the figure is in the position shown.

Notice that the feet begin pointing down until it looks like the figure is completely in the air. This is because IK (Inverse Kinematics) is applied to the legs.

Basically, IK sets up dependencies between parts of a figure to simulate more realistic movement. In this case, each part of the leg is dependent on another to determine movement. for example, when the Thigh moves, the shin follows. You can turn IK on and off depending on your needs. Refer to "Inverse Kinematics" on page 111 for a complete discussion of IK.

5 With the Hips selected, lower the figure so that its toes touch the Ground plane.

Drag down until the figure is in the position shown.

6 Select the Right Forearm.

The selected forearm.

7 Pull the Forearm to the right, then up and down.

Notice that this movement affects more than just the Forearm. You're pulling the figure all the way down to the Abdomen. You'll see what's causing this behavior when you select the Chain Break tool.

The Chain Break tool lets you assign chain breaks to your figure. Chain breaks tell the Translate tools how far to affect the position of the figure. You'll see one chain break on the Hips, and one on the Head. Since the Hips are the figure's root part, you cannot turn the chain break off there. However, you can turn off the head's Chain Break.

Next you'll explore assigning chain breaks.

To assign chain breaks:

1 Select the Chain Break Tool.

The Chain Break tool.

A chain break icon appears over every chain break in the figure.

The default chain breaks on a figure.

2 Click on each Collar to assign a chain break.

A chain break assigned to the Collar.

3 Click each Thigh to assign two more breaks.

You'll notice that you can assign chain breaks to both collars but not to the Thighs. This is because IK is turned on.

4 Choose **Figure menu> Use Inverse Kinematics> Left Leg** then choose **Right Leg**. IK is turned off when there is no checkmark next to a menu item.

5 Now, try assigning chain breaks to the legs.

Next, you'll explore using the Translate In/Out tool.

To use the Translate In/Out tool:

1 Click the Translate In/Out tool.

The Translate In/Out tool.

2 Select the Right Foot.

The Right Foot selected.

3 Drag up.

The Right Foot and leg move away from you.

The position of the Right Foot after the move.

4 Select the Chest.

5 Drag down.

The figure appears to bow.

The new position of the Chest.

6 Press Command/Ctrl-Z to undo the last command.

7 Choose **Figure menu> Use Inverse Kinematics> Left Arm** then choose **Right Arm** to turn IK on in the arms.

IK is enabled when a checkmark appears next to a menu item.

When you enable IK, any chain breaks you assign to the arms are deleted. IK on the Arms doesn't affect the Collar chain breaks you assigned earlier.

8 Select the Chest again and drag down.

With IK turned on, the Hands resist movement when you translate a body part that affects them. It appears as if they are holding onto something.

The position of the figure with IK turned off.

Posing

In this section you'll learn several ways of posing that expand on what you have learned in the previous sections.

Lesson 1: Creating Poses

In this lesson, you're going to use everything you've learned so far about Poser's tools to create a simple, yet realistic pose: Hands on Hips.

You'll use the tools as well as the Symmetrical command to quickly set-up the pose. Keep in mind that although the human body looks symmetrical, it's rarely positioned in a symmetrical manner. Even a very symmetrical pose like placing both hands on your hips may not look entirely natural if you just reverse the values from left and right. That's why you'll also use the tools to set up a more natural position for the figure's limbs.

Posing using the Posing Tools can be somewhat imprecise for the new user; you may want to use the Parameter Dials to reposition body parts. The Parameter Dial values used in the pose are listed so you can duplicate it using only the dials.

Once you achieve the pose described here, use what you've learned to make additional adjustments so that the final pose looks right to you.

To assign Chain Breaks to a figure:

1 Open a new document.

The default Casual Female appears.

2 Choose **Figure menu> Use Limits.**

This command prevents movement of body parts into an unnatural position.

3 Press Command/Ctrl-M to select the Main Camera.

4 Select the Chain Break tool.

The Chain Break tool.

5 Assign a Chain Break to the Chest.

The new Chain Break on the figure.

To position the right arm:

1 Select the Twist tool.

The Twist tool.

2 Select the figure's Right Shoulder.

3 Place the Twist tool over the background in the Document window.

4 Drag right so that the arm twists to 45°.

The Right Shoulder's Twist parameter should be set at approximately 45°.

The Right Shoulder should be in the position shown.

5 Select the Right Forearm and drag right.

The Twist dial should be at 14°.

The Right Forearm should be in the position shown.

6 Select the Right Collar and drag right.

The Twist dial should be at 25°.

The Right Collar should be in the position shown.

7 Select the Rotate tool.

8 Select the Right Hand.

9 Move the Rotate tool to a blank area of the Document window and drag right to bend the Right Hand.

The Bend dial should read about -75°.

The Right Hand after positioning.

10 Select the Right Forearm.

11 Set the Bend dial to 95°.

12 Set the Side-Side dial to 5°.

The new position of the Right Forearm.

13 Using the Rotate tool, select the Right Shoulder.

14 Set Bend to 26°.

The new position of the Right Shoulder.

15 Select the Right Collar.

16 Set Bend to 25°.

The repositioned Right Collar.

Once you're done, your parameter dials should read as follows:

Right Collar:

- Twist = 25°
- Bend = 25°

Right Shoulder:

- Twist = 45°
- Bend = 26°

Right Forearm:

- Twist = 14°
- Side-Side= 5°
- Bend = 95°

Right Hand:

- Bend = -75°

To apply the right arm pose to the left arm:

1 Choose **Figure menu> Symmetrical> Right Arm to Left Arm**.

The symmetrical pose.

2 A dialog appear asking if you want to copy the joint zone's setup also. Click No.

3 Save the file.

Your pose is almost finished, but it still looks a little unnatural. Next you'll shift the figure's weight.

To achieve a natural standing position:

1 Click the Translate/Pull tool.

2 Select the Right Foot.

3 Drag left so that the figure appears to be placing its weight on the left leg.

The repositioned foot.

4 Choose **Figure menu> Use Inverse Kinematics> Right Arm**.

5 Choose **Figure menu> Use Inverse Kinematics> Left Arm**.

6 Click the Twist tool.

7 Select the Abdomen.

8 Drag left so that the Twist dial reads -10°.

The repositioned Abdomen.

9 Select the Chest.

10 Drag left so that the Twist dial reads -10°.

The finished pose.

Lesson 2: Adding Poses to the Pose Library

Once you create a Pose, you can add it to the library for future use. For easy access, you'll also create a new category for your custom poses.

To add a pose to the library:

1 Press Command/Ctrl-Shift-B to open the Libraries palette.

The Libraries palette.

2 Click the Poses button.

The Poses button.

The default Action Sets library appears.

3 Click the Sub-Category menu and choose Add New Category.

The Sub-Category menu.

A Save dialog appears.

4 Enter a name for your personal library and press Enter.

5 A dialog appears asking if you want to save a Single frame or a multi-frame animation. Select Single frame and click OK.

A new category appear in the palette.

6 Click the Add to Library (+) icon at the bottom of the palette to add a custom pose.

The Add to Library icon.

7 Enter a name for the pose, such as Hands on Hips or Posed Arms 01.

8 Press the Enter.

The pose saved into a personal category.

Poser creates a library entry which you can use as the base for other poses on other figures. However, if you use a figure other than the Casual Female, you may need to make subtle adjustments to make the pose work correctly.

Poses not only save joint bends and rotations, but also facial expressions and other Morph Targets. For example, if you have two women interacting, each time you apply a saved pose for the Female figure, all the scaling and morph targets are replicated from the originally saved file.

If you only want to save the body part position, and not the facial or morph targets, apply your saved pose to a Stick Figure. Then delete the original library entry and save the Stick Figure pose. This way only the body part positions are saved.

Lesson 3: Posing Faces

Facial Expressions are created using Morph Targets. These targets alter the shape of the polygon mesh that makes up the figure.

Many of the Parameter dial on the Face have *morph targets* associated with them. When you work with facial dials, you're moving the figure's geometry towards one or more morph geometries. Refer to "Using Morph Targets" on page 152 for more on morph targets.

The Scale, Translation, Rotation and Taper dials for the Face are not morph targets.

To apply preset expressions:

1 Press Command/Ctrl-N to start a new document.

2 Press Command/Ctrl-(+) to switch to the Face camera.

3 Press Command/Ctrl-Shift-B to display the Libraries palette.

4 Click the Faces button to open the Faces library.

The Faces library.

5 Select the figure's head in the Document window.

The selected head.

6 Apply each expression preset by double-clicking on the library thumbnail.

An expression preset applied to the figure.

As you apply each face, pay attention to the Head's Parameter Dials. Notice how they change, interacting with each other to achieve a desired expression.

When you examine the dials you'll see that the mouth has more targets than any other part of the face. That's because the mouth can be precisely posed to create subtle expressions.

Parameter dials for the mouth.

Keep in mind that dials such as Smile affect primarily the upper lip, as opposed to the Frown dial which affects the lower lip. Slightly fewer dials apply to the brows—three for each.

You'll notice that here is no target for a Furled Brow. To accomplish this, select the Worry Left and Worry Right dials and enter Negative 0.5 in each.

After exploring the facial controls, you're ready to create your own expression. Next, you'll create the face of an angry woman using the target dials.

To create an expression:

1. Select the head.
2. Enter Open Lips= 0.431 to tighten the lips.
3. Set Smile= -0.128.
4. Set Mouth F= 0.152. This pulls in the lower lip.
5. Set Mouth M= 0.234 to tighten the lips laterally.
6. Set Blink Right and Blink Left = 0.2 to narrow the eyes slightly.

Note

Be sure to use the decimal point in each of these numbers. If, for instance, you enter -431 instead of -0.431 for the Open Lips, you will severely distort your figure—she'll be *very* angry.

The completed expression.

7. Click the Add to Library (+) button at the bottom of the Libraries palette to save the file to the Faces library.

Rendering

Rendering is the process of converting your 3D figure into a 2D image or animation. There are several options you can set for a rendering session. All available options are displayed in the Rendering Options dialog.

To set up a rendering session:

1. Choose **File menu> Open**.
2. Locate the file **Tutorial: paper-airplane.pz3**.

The paper-airplane file in the Document window.

3 Press Command/Ctrl-Y.

The Render Options dialog appears.

4 Make sure the Anti-Alias box is enabled.

This gives you a clean render, but may bog down slower machines.

5 Disable the Cast Shadows option.

This will speed things up.

6 Click Render Now.

In true WYSIWYG fashion, what you see in the document window is exactly what is produced.

The rendered file.

Depending on where the main camera is positioned when you saved the document, this may serve as your final render. However let's assume you're not satisfied with the results.

To reposition the camera:

1 Select the Main Camera.

The main camera icon.

2 Choose **Object menu> Point At**.

3 The Choose Actor dialog appears.

4 Select the Teacher figure's Head element from the list, then click OK.

5 Use the Scale Parameter dial to rescale the camera so that both figures fill the screen.

Both figures in the scene.

6 Move the Camera using the X and Z tool on the Camera Controls.

The camera will always point at the Teacher.

The view through the repositioned camera.

7 Use the Move X and Y tool to adjust the elevation of the camera.

The view through the elevated camera.

8 Render the file again.

The test render

9 When the test render produces good results, enable Cast Shadows in the

Render Options dialog (Command/Ctrl-Y) and render the file once more.

The final render.

There is no set rule of what makes a good render. Success is subjective. Poser can produce varied results using its custom rendering engine. Try exploring other rendering options using this file and other personal files.

Advanced Tutorials

The following tutorials are designed to be both challenging and rewarding. Do not plan on completing these tutorials quickly; work methodically so that you become comfortable exercising Poser's most powerful features.

The scenes you create in these tutorials can be dropped into most contemporary films, or can be the centerpiece of a major production. The goal is to provide you with experience using Poser's animation tools that will enable you to produce increasingly complex and extravagant scenes.

At any time while working with these tutorial, feel free to experiment. Each section overlaps and explores different features, as well as different aspects of the same features. This allows you to develop a well rounded understanding of how to accomplish desired effects.

Character Creation and Animation

Lesson 1: Creating a Clown from Scratch

Use of props and texture maps are essential to creating a good character. This lesson walks you through the processes of scaling body parts, applying props, and texture mapping to create a basic clown figure from scratch.

You'll also animate your clown and place him in a scene to interact with props and other figures.

To select a base figure:

1. Click the Figures icon on the Libraries palette

   The default People sub-category appears.

2 Double-click the Business Man thumbnail to load the figure.

The Business Man thumbnail.

To set figure color:

1 Click the Smooth Shaded document style icon.


The Business Man displayed using the Smooth Shaded Document style.

2 Click the Color tool.


The Color tool.

3 Click a body part and choose white from the palette that appears.

4 Make all the parts of the figure, including the clothing, white.

Some of the smaller parts of the figure (such as Brows, Lashes, Shoes, Lips) may be difficult to color quickly. Try using the Face, or Hand cameras to get better views of these areas.


The colored figure.

If there are still colored areas, click and hold the tool over the colored element and choose white from the palette that appears.

To apply a texture map:

1 Choose **Render menu> Materials**.

The Surface Material dialog appears.

2 Click the menu in the top-left corner of the dialog and choose Figure 1.

3 Enable the Texture Changes Apply to Entire Figure option.

4 Click the Load button in the Texture Map section of the dialog.

An Open dialog appears.

5 Locate the file **Tutorial: CLOWN01**, and click Open.

6 Click OK in the Surface Materials dialog.

7 Click the Texture Shaded icon to see the new texture.

The Texture Shaded icon.

The new texture map applied to the figure.

To add a prop:

1 Click the Props icon at the top of the Libraries palette.

The Prop icon on the Libraries palette.

2 Select the Prop Types category.

3 Double-click the Ball thumbnail to load the Ball object.

The Ball thumbnail.

4 Click Color tool.

The Color tool.

5 Click the ball and make it red.

To position the prop:

1 Drag to the right over the Camera controls until the From Left camera icon appears.

The From Left camera icon.

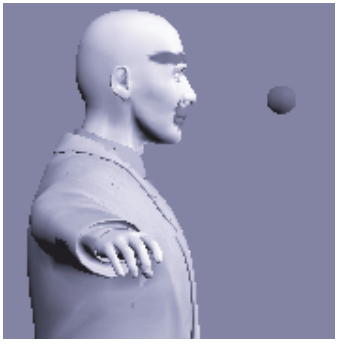
2 Click the Translate/Pull tool.

The Translate/Pull tool.

3 Position the ball in front of the clown's face.

Position the ball as shown.

4 With the ball selected, set the Scale dial to 22%.



The scaled ball.

5 Use the Translate/Pull tool to move the ball over the clown's nose.

Position the ball over the nose as shown.

6 Press Command/Ctrl-F to switch to the Front camera.

7 Check the lateral position of the ball on the nose.

The clown displayed using the Front camera.

To set the prop parent:

1 Choose **Object menu> Change Parent** to display the Choose Parent dialog.

The dialog shows a visual list of all the objects in your scene.

2. Click Head in the list and click OK.
3. Press Command/Ctrl-M to switch to the Main camera.
4. Review your work from several angles.
5. Save the clown to the Figure library in the Libraries palette. Refer to "Lesson 2: Adding Poses to the Pose Library" on page 81 for instructions.

Lesson 2: Making the Clown Walk

This lesson leads you through the process of creating and editing keyframes to create a walking motion.

You can use this animation later with the Walk Designer.

Setting the First Walking Frame

To begin you need to set up a starting pose.

To set up a starting pose:

1. Make sure your clown document is still open.
2. Double-click the handle at the bottom of the screen to open the Animation controls.

The Animation controls.

3. Make sure the frame counter is set to 1 of 30.
4. Press Command/Ctrl-M to switch to the Main camera.

The clown displayed using the Main camera.

5. Select the Right Shoulder.
6. Set the Bend value to 78°.

The bent Right Shoulder.

7. Select the Left Shoulder.

8 Set the Bend value to -78°.

The adjusted Left Shoulder.

9 Select the Abdomen and set Side-Side to 3.

10 Select the Chest and set Side-Side to 3.

The adjusted Abdomen and Chest.

11 Press Command/Ctrl-(') to switch to the From Right camera.

12 Click the Translate/Pull tool.

The Translate/Pull tool.

13 Select the Left Foot and move it forward.

The re-positioned Left Foot.

14 Select the Right Foot and move it back.

The final pose.

Adding Keyframes

Once you have a starting point, you'll create an action by changing the pose over time and saving the changes as keyframes. A keyframe stores a point in time where action occurs. Here you'll store changes in foot positions as keyframes to create a walking motion. Refer to "Adding and Deleting Keyframes" on page 213 for more on setting up keyframes.

To add frames:

1 Press Command/Ctrl-M to switch to the Main camera.

The clown viewed from the Main camera.

2 In the Animation controls, drag the small triangle (called the Scrubber) to Frame 16.

The Scrubber at Frame 16.

3 Choose **Figure menu> Symmetry> Swap Right and Left**.

The figure's left foot moves back and the right foot moves forward.

The left foot position sapped for the right foot position.

4 Click the Add Keyframe (+) button to keyframe the new position.

The Add Keyframe button.

5 Move the Scrubber to Frame 15.

6 Click the Add Keyframe (+) button to insert a keyframe.

Editing Keyframes

Now that you have a number of keyframes, you'll learn how to edit them in the Animation palette to create more realistic motion.

To edit frames:

1 Click the Edit Keyframes button.

The Animation palette appears. The palette displays all the animatable attributes in the studio and all the keyframes you've created. Refer to "Editing Animations" on page 213 for more on this palette.

The Animation palette.

2 Drag the scroll bar all the way to the top.

3 Click the green keyframes for Frame 15 and drag all the way to the bottom to select the keyframes for all the attributes. The selection is bordered with a white line.

All the Frame 15 keyframes selected.

Be sure only the green keyframes of Frame 15 are selected. Be very careful not to select anything but Frame 15.

4 Drag all of selected keyframes to Frame 30.

Frame 15 keyframes moved to Frame 30.

5 Click the close box in the upper-left corner of the dialog.

6 In the Animation controls, move the Scrubber to Frame 30.

The Scrubber at Frame 30.

7 Choose **Figure menu> Symmetry> Swap Right and Left**.

8 Click the Play button to check your work.

The Play button.

The figure should appear to walk in place.

Saving the Walk

You can save animations as poses to the Libraries palette. Next, you'll save your completed walk to the Poses library.

To save an animation to the library:

1 Open the Libraries palette.

2 Click the Poses icon.

The Poses icon in the Libraries palette.

3 Click the sub-category menu and choose Walk Designer.

4 Click the Add to Library (+) icon.

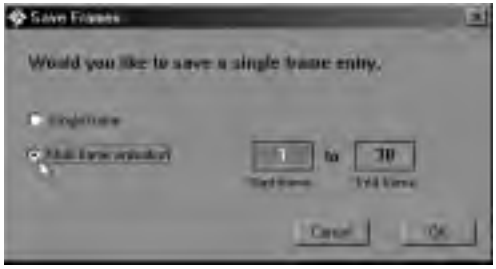
The Add to Library icon.

The Add New Set dialog appears.

5 Enter a name for your animation and click OK.

A Save Frames dialog appears.

6 Enable the Multi Frame option and click OK.



The Save Frames dialog.

7 Your animation is saved as a 30 frame preset in the Walk Designer category.

The clown in the Libraries palette.

Lesson 3: The Walk Designer

The Walk Designer lets you set up various parameters to automatically create a realistic walking motion. In this lesson you'll use the file you created in the previous lesson in conjunction with the Walk Designer to make your clown move.

To set up the walk animation:

1 Choose **File menu> New** to start with an empty file.

2 Open the Libraries palette and click the Figures icon.

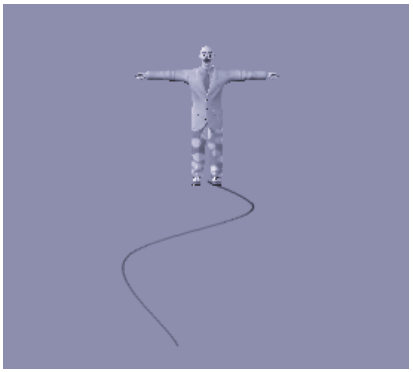
3 Double-click the clown figure you saved earlier.

The default figure is replaced with the clown.


The clown figure in the Document window.

4 Choose **Figure menu> Create Walk Path**.

A new path appears in the Document window.


A new Walk Path in the Document window.

5 Make sure the Scrubber in the Animation Controls is at Frame 1.

6 Open the Libraries palette and click the Pose icon.

7 Click the sub-category menu and choose Tutorial.

8 Double-click the Clown-Start pose to apply it to the clown.

The Clown Start pose in the Library.

9 Display the Animation palette.

10 Move the Scrubber to Frame 30.

11 In the Libraries palette, double-click the Clown Finish pose to apply it.

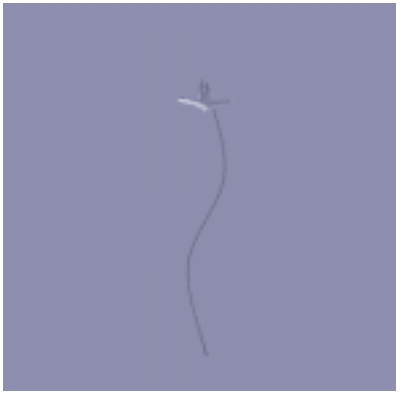
The Clown Finish pose in the Library.

12 Click the Current Element popup at the bottom of the Document window and choose **Cameras> Top Camera**.

The Element menu.


The clown viewed from the top.

13 Set Scale to 400%. You should able to see the entire scene.

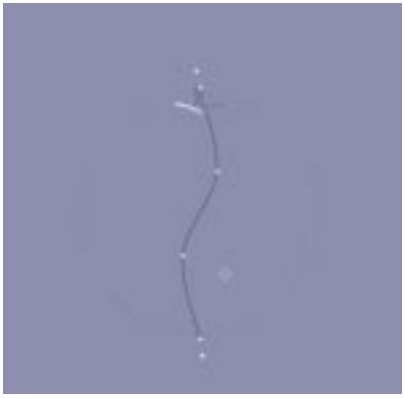

The scaled view of the clown.

14 Move the camera up or down to see the whole path.

15 Select the Walk Path using the Translate/Pull tool.

It looks like a slight backward "S" extending out in front of the figure.

The path has several small white squares along the gray walk path called *nodes*.



Nodes on the Walk Path.

16 Select each of the middle two nodes and move them so that the path becomes straight. Notice how the pointer changes when you position it over the path.

Your path should look like the one shown.

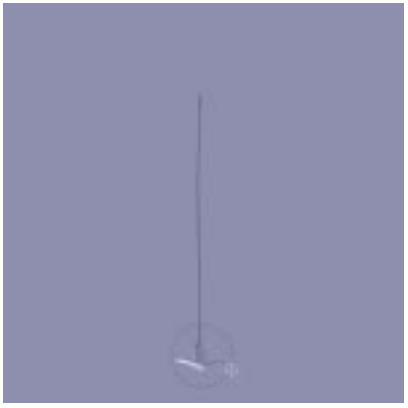
17 Make sure the Scrubber is at Frame 30.

18 Click the Element menu at the bottom of the Document window and choose Body.

19 Drag the clown to the end of the Walk Path.

Make sure the red figure ring appears before you start dragging. The ring indicates that the whole figure is selected. Do not click directly inside the Figure ring or you will move the figure's parts instead of the entire figure.

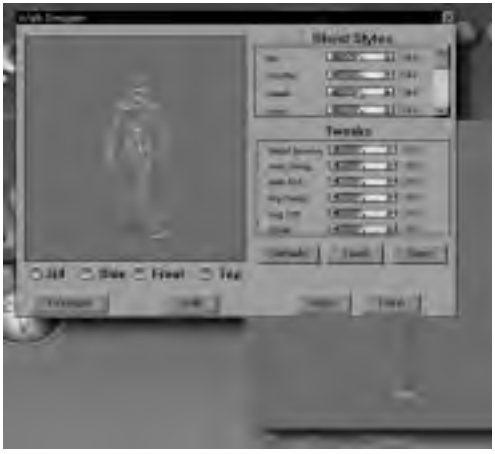
Place the clown over the end of the gray path.



The repositioned clown on the path.

To set up a walk in the Walk Designer:

1 Press Command/Ctrl-Shift-S to open the Walk Designer.



The Walk Designer.

2 Click the walk button to see the current walk style in action.

Click the stop button to stop the action.

3 Scroll the Blend Styles section of the dialog until the Clown walk is visible.

4 Set Clown to 100%.

5 Click Apply.

The Apply Walk dialog appears.

The Apply Walk dialog.

You are about to apply the walk to the figure. Once you're done with the Walk Designer, the only real way to fix errors is to start from scratch (beginning from Lesson 3).

6 Make sure the following defaults are set in the dialog:

- Start Frame = 1
- End Frame = 120
- Figure = Figure 1
- Walk In Place = Disabled
- Cycle Repeat = Empty
- Path = Path_1
- Always Complete last step = Enabled
- Transition from pose at path start in 15 Frames = Enabled
- Transition to pose at path start in 15 Frames = Enabled
- Align head to = Disabled

7 Once all parameters in the Walk Designer are set, click OK.

8 Click Done to close the Walk Designer.

The new walk is applied to the clown.

9 Save the file with the name: **CLOWN-ANI**.

Lesson 4: Keyframe Editing

So far, you've created a waddling clown that appears to fall over something invisible at the end of the Walk Path. There are two missing elements: the object the clown fell over, and the cause of his fall. By editing the animation and adding props, you can create the story behind the clown's actions.

First. you'll create a back up file to preserve your work so far.

To create a back up file:

1 Open the file you saved at the end of Lesson 3.

2 Choose **File menu> Save A**s.

3 Rename to the file to **CLOWN-ANI01**.

Now you have a back-up of your original animation.

Consider using a compression utility to archive the original clown-walk.pz4 file. This will save hard drive space and future headache's. You can continue to add completed lesson file to the archive as you work through the rest of the tutorial.

Next, you'll set up an animated expression for the clown.

To set up an animated expression:

1 Click the Edit Keyframe button on the Animation controls.

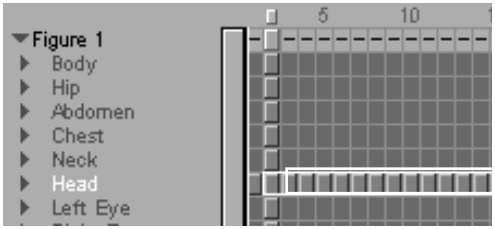
The Edit Keyframes button.

The Animation palette appears.

2 Click the Head label on the left side of the dialog.

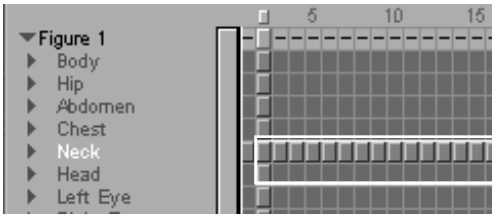
The Head element selected.

3 Select all the keyframes from 2 to 105.



Head keyframes selected.

4 While still pressing the mouse button, drag up one line to include the Neck frames in your selection.



Both Head and Neck keyframes selected.

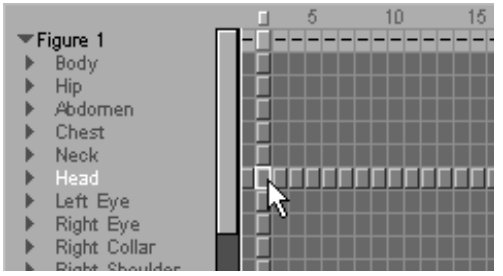
5 Press Delete.

6 With the frames still selected, click the Linear Section button.

Linear Section button.

This is important for any expression changes applied face during the animation.

7 Select Head keyframe 1.



Head keyframe 1 selected.

8 Close the Animation palette.

9 Open Libraries palette.

10 Click the Faces icon at the top of the palette.

The Face icon on the Libraries palette.

11 Click the sub-category menu and choose Add New Category.

The New Category dialog appears.

12 Enter **Clown Faces** and click OK.

13 Click the Add to Library button to add the clown's face into the library.

Your clown face in the library.

14 Move the Scrubber to Frame 105.

15 Apply the face preset you just saved to the clown.

Next, you'll add another actor to your scene.

To import a Poser document:

1 Choose **File menu> Import> Poser Document**.

An Open dialog appears.

2 Locate the file **Tutorial: TRAPESE ARTIST WALK**.

A new figure appears in the document window.

The imported document in the Document window.

3 Click the Element menu beneath the Document window and choose Top Camera.

4 Set Scale to 400%.

The figures viewed from the Top Camera.

5 Click the Box Tracking icon.

The Box Tracking icon.

6 Click the Play button on the Animation controls

The Play button.

While the animation plays, watch the relative positions of the figures as they pass each other. At the beginning, they're walking past each other on the right. Then, the clown turns his head to face the new figure as he walks.

To align the figure's face:

1 Make sure the Scrubber in the Animation controls is at Frame 1.

2 Press Command/Ctrl-T to switch to the Top camera.

The scene from the Top camera.

3 Use the Twist dial to align the head to face of the Trapeze Artist figure.

The clown's head rotated to face the Trapeze figure.

Tip

If you're having a hard time seeing the position of the clown's head, try expanding the size of the Document window using the resize control in the bottom-right corner of the window.

4 Divide the Twist value in half and reset the Twist dial.

This creates the starting pose for the clown's head.

5 Select the clown figure's Neck.

6 Use Twist to align the Neck so that the clown's face is looking at the Trapeze Artist figure

The head and neck rotated.

7 Move the Scrubber to Frame 50.

8 Repeat steps 2-6 for Frame 50.

9 Move the Scrubber to Frame 55.

In Frame 55, the Trapeze Artist and the Clown are in the process of passing each other. The Clown's chin should be in-line up with his shoulder, and his silly grin should be intact.

10 Repeat step 2 to 6 for Frame 55.

Next, you'll twist other body parts to keep the Clown facing the Trapeze Artist. You'll use the same twisting method you used on the Head to re-align the Chest and Abdomen.

To align the figure's body:

1 Click the Edit Keyframe button to open the Animation palette.

The Edit Keyframe button.

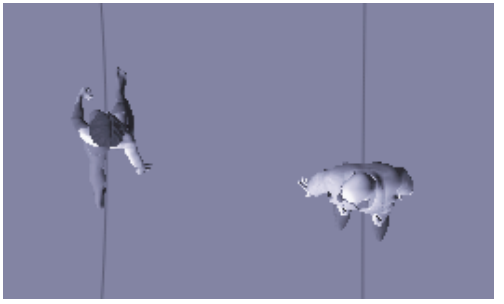
2 Select keyframes 56 through 105 of both the Clown's Abdomen and Chest.

3 Press Delete.

4 Close the Animation palette.

5 Move the Scrubber to Frame 60.

6 Press Command/Ctrl-T to switch to the Top camera.



The scene view through the Top camera.

7 Click the Element menu and choose the Chest.

8 Use the Twist dial to align the clown's chest so that its Head faces the Trapeze Artist.

The re-aligned chest and head.

Twist should be set to approximately -46.

9 Divide the value of the Chest's Twist dial in half and reset Twist to the resulting number.

10 Click the Element menu and choose the Abdomen.

11 Use the Twist dial to align the abdomen so that the clown faces the Trapeze Artist.

The re-aligned abdomen shown through the Main camera.

These are more refinement s you can add to this file to make the action more realistic:

- Have the clown's eyes follow the Trapeze Artist as his body finishes twisting.
- Add hand gestures to both figures.

Use the skills you've learned in the earlier parts of the tutorial to create these effects.

Lesson 5: Adding the Final Touch

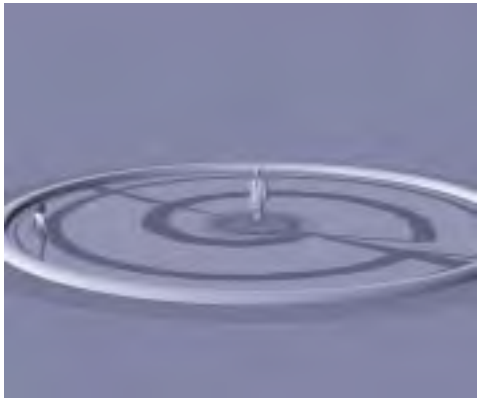
At the end of the Clown animation, the Clown seems to trip and fall over an invisible object. To complete the scene you'll need to add a prop.

To add a prop:

1. Display the Libraries palette.
2. Click the Props category dot.

The Props category dot.

3. Choose the Tutorial category from the menu.
4. Click the Circus Ring.



The Circus Ring prop in the scene.

The prop is added to the scene.

Now that you have a prop, you can adjust the character's movements to interact with it.

To add an animation to your scene:

1. Click the handle at the bottom of the screen to display the Animation controls.

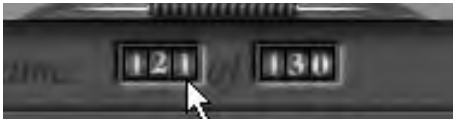
   The center of the Animation controls, displays the current frame and the total number of frames.

2. Click the total number of frames field.

3. Enter 130 to add ten frames.

The total number of frames field.

4. Click the current frame display and enter 121.



The current frame field.

5. Click the Poses category dot in the Libraries palette.

The Poses category dot.

6. Click the sub-category menu and choose Tutorial.

7. Click the Clown Flop pose.

The Clown Flop pose in the library.

This ten frame animation will be added to your the animation.

Note

When you're setting up an animated pose like Clown Flop to append to a work in progress, be sure not to move the entire Body. Adjust the Hips instead to get the proper motion in relation to the last pose created.

Lesson 6: Setting Animated Cameras and Test Rendering

In this lesson you'll use the Dolly camera (the only free floating camera in Poser) to render the scene.You could use any camera to render, the Main, Auxiliary, Posing, and Head cameras

are all good choices for rendering. However, the advantage of the Dolly camera is that it stays true to its own center, making it useful for animations.

When you've completed the lesson, try experimenting with the other cameras, especially the Head and Posing cameras.

To position the Dolly camera:

1 Select the Dolly Camera from the Camera Controls palette.

The Dolly camera icon.

2 In the Animation controls, move the Scrubber to frame 120.

3 Using the Move X and Y control, move the camera back until the Clown is in full view.

The readjusted view.

4 Choose **Animation menu> Make Movie**.

The Make Movie dialog appears.

5 Click the Resolution menu and choose Quarter.

6 Click the Quality menu and choose Current Display Settings.

These settings should give you a good test render.

Note

Reduce the resolution for the test render, as Full resolution renders are time consuming. Even at this resolution, the animation will not render quickly.

7 Click OK. The Save dialog appears.

8 Choose a save location for the MPEG (MAC) or AVI (PC) file and click OK.

The Video Compression dialog appears.

9 Use the default settings and click OK.

Poser starts rendering.

Lesson 7: Final Render

After one or more test renders, you're ready to start the final rendering.

To render your final animation:

1. Choose **Render menu> Current Render Settings**.
2. Adjust the Current Render Settings as needed.

   Enable Shadows and Anti Aliasing to produce the best results.
3. Click Render Now.

   Depending on the Image Size and Computer System, the final render takes between 45 minutes to two hours.

Poser's animation tools are its single most powerful features. Creating animation is challenging, even for the most experienced user. Patience is key to using all 3D applications, and Poser is no exception.


HOURS LATER KARL AND ANNA RETURN TO SURVEY THE RUINS OF THIER BELOVED CIRCUS.
"LOOK KARL. THE EVIL MAN DROPPED SOME KIND OF MAP."
"IT MUST LEAD TO THE SOURCE OF ALL HIS POWER."
MOMENTS LATER, THE TWO ARE OFF ON A DESPERATE QUEST TO STOP THE EVIL DESPOT.
BUT THEIR JOURNEY IS NOT AN EASY ONE. DR. PLANE'S MINIONS BLOCK THEIR EVERY PATH.

4

Posing

How Posing Works

Posing is the process of bending, twisting, and pulling a figure into new and fantastic positions.

There are two aspects of a pose: how the body parts twist and bend and the position of the body in the studio. The Editing Tools let you move both body parts and entire bodies simply by clicking and dragging.

Since you're working in three-dimensional space, you can pose your figure in almost any position. The only limits are specific range of motion limits placed on individual body parts, to keep poses realistic. For example, in the human figure, you can't twist the head 360°.

Posing and Camera Views

With the newer Poser figures, you can pose the hands and faces of your figures. Poser includes special cameras that automatically zoom into figure's hands and faces.

Note

Posing works differently depending on the models you use. You have more control over the hands and face of the newer Poser People category models. Poser 2 models have fewer controls.

When you're posing, you can switch camera views to see and adjust the pose from different directions. Use the Posing Camera to view a figure close-up, while preserving the position of the Main Camera. Refer to "Cameras" on page 177 for more information.

Posing and the Library

As you create poses, you can add them to the Libraries palette. You can then retrieve a pose from the library and use it as a starting point for a new pose. Refer to "Loading from the Libraries Palette" on page 33 for details.

Translation

Translation moves multiple body parts, pulling them along in a chain. To visualize this, think of a person lying relaxed. If you were to take hold of the hand and pull up, you'd lift the arm off the floor. Pull higher, and you'd lift the shoulder, then the chest.

This is how the Editing Tools work in Poser. Drag any part, and connected parts follow. Not only do the parts move, but they bend and twist as you would expect.

Starting here...

Dragging the hand up...

Continuing to drag, lifting the arm, the shoulder, and eventually the body.

Inverse Kinematics

Poser's Inverse Kinematics (IK) features help you achieve realistic poses and natural motion in animations. The term may sound intimidating, but IK is easy to use and understand.

The effects of IK are most apparent when using the Editing Tools. Translate the hip—the legs bend to accommodate the new hip position without changing the foot position. Translate a foot—the hips and other leg stay fixed in position.

The behavior of the arms under IK is similar. If you place a figure's hands against an imaginary wall, moving the hip toward the wall causes the arms to bend. The arms bend while the hands remain fixed in position.

If you enable IK on a pose created with IK turned off, the rules of IK can force the pose to change.

Understanding IK

Kinematics is the study of motion, velocity, rotation, and position. In terms of jointed structures, like an arm or leg, forward kinematics can be used to calculate how actions at the root of the structure determine the position and rotation of those at the end. For example, by raising your arm, the hand at the end of it is automatically translated to a new position and rotation. If you know the angle the arm raises, you can calculate the new position of the hand.

IK uses the same kind of dependency, but in reverse. The extremity moves, and IK determines how the objects joined to it (closer to the root) must respond to support the new placement. For example, if someone was to grab your hand and push, your arm would automatically bend at the elbow, while your shoulder would stay fixed in position.

Poser supports IK for the legs and arms. When IK is turned on, you can translate the hands and feet and achieve appropriate arm and leg positions automatically.

When IK is turned on for the arms or legs, the hands and feet have targets to indicate the end of the chain. When the hands or feet are moved, the target moves—it is reset to a new position. When you move any other body part, the targets remain fixed and the arms and legs reach for their targets. Once the target is reached, the end of the chain is fixed, and the other parts must bend to accommodate the hand or foot position. For example, a foot reaches its target and the knee bends.

Lift the foot and the leg bends naturally.

Translate the hips down and the knees bend.

To work effectively with IK, note the following:

- IK is enabled when you use the Editing Tools.
- The Rotate, Translate, and Twist tools may not behave as expected on some body parts. For example, you cannot easily rotate or translate a thigh or shin when IK is enabled—the foot's position takes precedence.

  This corresponds to the natural behavior of your limbs. When you stand, your feet and legs support your body weight, so you cannot arbitrarily move or rotate them. This consideration applies to using Editing Tools and Parameter Dials.
- You cannot use both the Chain Break tool and IK on the same limb.

Turning IK On or Off

Inverse Kinematics can be set for the legs and arms of any figure. For a new figure, IK is enabled for the legs, but not the arms. For most artists, this setting offers the most useful way to work. You can enable IK for the arms or disable it for either or both legs.

To change the IK setting for the current figure:

- Choose **Figure menu> Use Inverse Kinematics>** *the limb you want to change.* IK is turned on when the menu item for that limb has a check beside it.

Limiting Motion

The Use Limits option keeps body parts within a natural range of motion. This feature does not apply to parts affected by IK.

What is considered natural differs among individuals. Poser's default limits are a rough guideline, and may not look right to you. You can customize the range of motion by setting the Use Limits maximum and minimum.

In some cases, Use Limits may prevent you from posing a part where you want it. Keep this in mind when you modify Use Limits.

To turn Use Limits on or off:

- Choose **Figure menu> Use Limits**. Use Limits is on when the menu item has a check beside it.

To change the range of motion allowed by Use Limits:

1. Select the body part whose range you want to adjust.
2. Double-click the Parameter Dial for the motion you want to adjust.
3. In the dialog, change the Max and Min values. When you are done, click OK.

Posing Body Parts

Like the human body, Poser figures are made of body parts connected by joints. You manipulate the separate body parts to pose a figure. Because body parts are independent, each is considered an object or element. This is also true for the animal models. No matter how many legs an animal has, each leg is connected by joints which bend and extend.

Selecting Parts

You can select a part to pose in one of the following ways:

- Click on the part in the studio.
- Use the Current Element pop-up beneath the Document window.
- Select the part from the Hierarchy Editor. For details on, refer to "Selecting Objects" on page 292.

An example of a selected body part.

Posing a Figure

The easiest way to pose your figure is to choose one of the Editing Tools, select a body part, and drag the mouse to move the part. How the part moves depends on which part it is, the tool you use, and the direction you drag. It also depends on whether Inverse Kinematics (IK) is enabled. IK is a special

posing feature that assists you in achieving realistic poses and natural animated actions more easily. Refer to "Inverse Kinematics" on page 111 for more information.

Only one body part can be selected at a time. The selected part is highlighted on the figure and listed at the bottom of the Document window. Always confirm which part is selected before using a tool on it.

If you are not satisfied with a change you make, choose **Edit menu> Undo**.

You can also use the Pose Memory dots to store changes in a pose as you create it. This way you can revert to a previous position if you are not satisfied with the change.

Using the Editing Tools

The Editing tools let you move body parts a number of different ways. The effect of each Editing tool depends on whether IK is enabled. Each tool can be used to pose a body part or to pose the entire figure.

To pose a body part:

- Select the part on the figure and drag.

To pose the entire figure, do one of the following:

- Click and drag on the tool icon you want to use. This automatically selects the figure.

  Or

- Select the Figure Ring surrounding your figure and drag. The ring is highlighted when selected, so you can tell you are editing the whole figure.

While you use a tool in the Document window, the cursor changes to a representation of the selected tool. This allows you to keep track of how you're moving a figure (such as rotating or twisting).

Click a body part to move it, or click the Figure Ring to move the entire figure.

When using a tool, you don't have to start dragging over a body part—you can drag from anywhere inside the document window.

Rotate Tool

The Rotate tool bends a body part at its joint. Click the Figure Ring to rotate the entire figure. Rotate works in three dimensions, so you can make a lot of progress with only a few moves.

Rotating a Body Part

The direction you drag determines how the part moves in each of the three dimensions.

- Drag perpendicular to the part to move it side-to-side or up and down.

Drag perpendicular to the arm to move the arm down to the side.

After moving the arm down toward the side.

- Drag parallel to the part to move it toward or away from you.

Drag parallel along the arm to move the arm around to the front.

After the arm is moved around to the front.

Rotating is easier when you view the bending part from the side. For example, in the discus thrower shown below, the left hand is better viewed from the side than from the front.

Using different camera views helps you to pose a figure more easily.

For this reason, you'll probably switch cameras several times as you pose different parts of a figure. Refer to "Cameras" on page 177 for details on using cameras.

Rotating the Entire Figure

When you drag the Rotate tool, the figure turns in three dimensions.

It takes a little imagination to understand how a two-dimensional mouse rotates a figure in three dimensions. Imagine a figure enclosed in a glass trackball. Now use the mouse to drag the front of the trackball to rotate it in the direction you want to turn the figure. The location on the trackball where you begin dragging makes a big difference in the direction the figure turns.

Original position.

Rotation on the X Axis

Drag down from the center of the window to rotate the figure face down.

Drag down to rotate on the x axis.

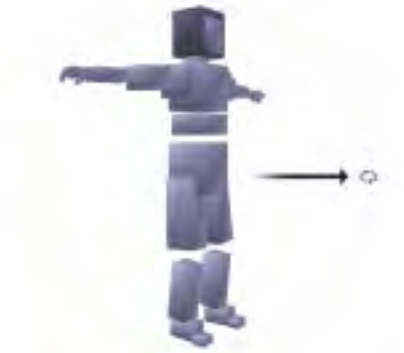
Rotation on the Z Axis

Drag in a circle from a corner of the window to turn a figure on its side.

Drag in an arc to rotate on the z axis.

Rotation on the Y Axis

Drag left or right from the center of the window to turn a figure side-to-side.



Drag left or right to rotate on the y axis.

Rotation on Several Axes

Drag at an angle to compound rotation.

Drag at an angle to rotate on several axes.

Twist Tool

Twist rotates a body part along its own axis. You can twist the entire figure by selecting the Twist tool and dragging. The entire figure twists around its own axis.

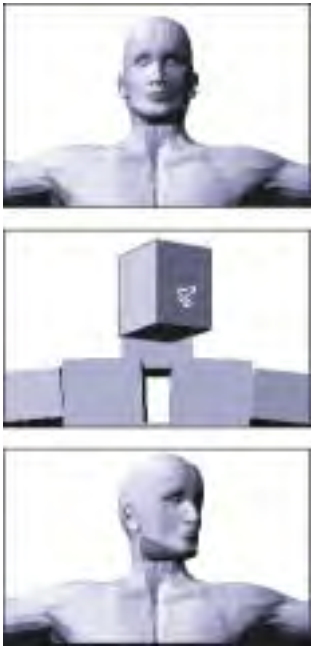
Twisting a Body Part

Drag laterally when twisting a specific body part, regardless of the part's angle.

Many of the human body's joints don't allow for much twist. The forearm can twist nearly 180°, but the hand can hardly twist at all. Keep this in mind as you pose the figure.

Twist the forearm to turn the palm up.

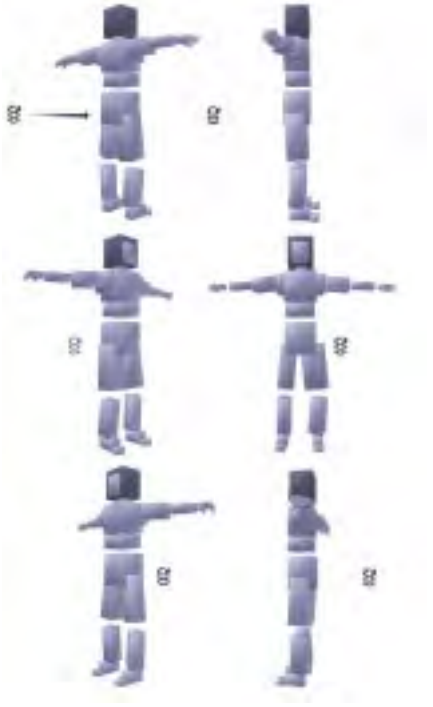
The axis of the head, neck, and trunk is in line with the spine. The axis of a part in an arm or leg is in line with its length.



Twist the head to turn it to the side.

Twisting the Entire Figure

When you drag the Twist tool, the figure rotates around its own axis. Drag laterally, regardless of which way the figure is leaning.



When a figure is standing, the Twist tool spins it around.

If the figure is lying down, the Twist tool rolls it over, from its stomach to its back.

Translate/Pull Tool

Translate/Pull moves the selected part or figure vertically or laterally (in the x and y dimensions), depending on how you drag.

Using Translate/Pull on the Entire Figure

When you drag the Translate/Pull tool, the figure moves laterally or vertically (in the x and y dimensions) in relation to the camera.

Drag in the direction you want to move the figure.

Translating moves a figure around the studio.

If you've rotated a figure to the edge of the window, you may want to move it back to the center. You may also move a figure if you are working with more than one, and want to place the figures relative to each other.

Translate In/Out Tool

Translate In/Out tool moves the selected part or figure in the z dimension—toward or away from the camera.

Using Translate In/Out on a Body Part

When you translate a body part, drag down to pull the part toward you. Drag up to push the part away.

Hold down the Command/Ctrl key to toggle between the Translate/Pull and Translate In/Out tools.

Using Translate In/Out on the Entire Figure

When you drag the Translate In/Out tool, the figure moves toward or away from the camera (in the z dimension). Drag down to move the figure toward you. Drag up to move it away.

Moving a figure toward you makes it appear larger in the window and vice-versa.

Translate In/Out moves a figure toward or away from the camera.

Chain Break Tool

A chain break placed on a body part ends the chain of parts affected by the Translate tools.

Chain Breaks are shown on a figure.

Use chain breaks on different body parts to modify translation effects. For example, to prevent the chest from moving, use the chain break on it. Now, if you translate the hand, only the forearm, shoulder, and clavicle are affected.

Note

This feature is only available for limbs not using Inverse Kinematics.

To add a chain break:

- Choose the Chain Break tool and click on the part where you want the chain

broken. A Chain Break icon appears on any affected parts.

To remove a chain break:

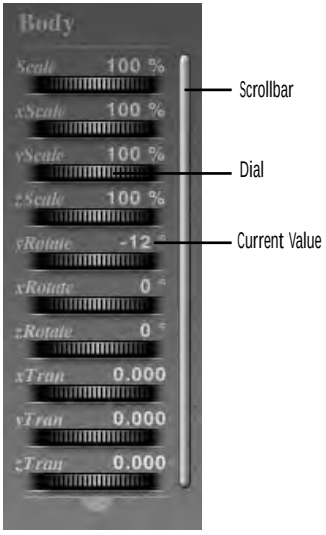
- Choose the Chain Break tool and click on the chain break you want removed.

Note

You cannot remove the chain break at the hip.

Using the Parameter Dials

The Parameter Dials let you pose a figure using precise numerical increments. By dragging on a dial you can move a body part in small increments, allowing you to create precise poses. Every property of a body part has its own Parameter Dial.



Parameter Dials.

When you select the Figure Ring, the Parameter Dials affect the entire figure.

To use the Parameter Dials:

1. Select the part you want to adjust.
2. Select the dial for the parameter you want to adjust, and drag it to the right or left.

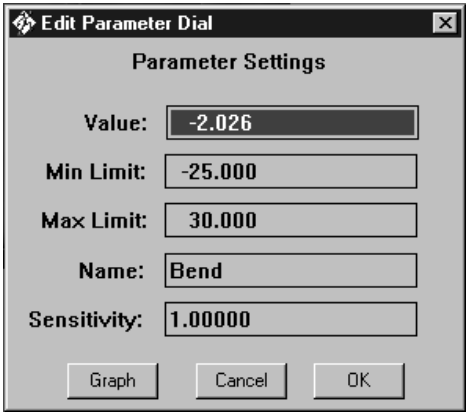
Note

If not all Parameter Dials appear in your window, drag the handle down to expose more dials, or use the scroll bar.

To set a numeric value for a Parameter Dial:

- Click on the dial's value, and enter a new value in the text field that appears.

The Parameter Dial dialog lets you control a property's numeric value, maximum and minimum limits, and name.



The Parameter Dial properties dialog.

To set a Parameter Dial's properties:

1. Double-click a Parameter Dial. A dialog appears.
2. Set any of the following options:
   - **Value**: to change the property's numeric value
   - **Min/Max Limit**: modify the property's Use Limits.
   - **Name**: create a new name for the property.
   - **Sensitivity**: modify the sensitivity of a parameter's dialing habits. The lower the sensitivity value, the less movement is allowed in its element.
   - **Graph**: click this button to modify the standard animation graph palette. For details on this palette, refer to "Editing Keyframe Interpolation" on page 225.
3. Click OK to close the dialog.

Default Parameter Dial Settings

Each body part's Parameter Dial has a default value that defines its original state. As you work with Parameter Dials, you may wish to go back to the default, or memorized, setting.

To reset a Parameter Dial's default values:

- Option/Alt-click the dial.

1. To change a Parameter Dial's memorized value:
2. Set the dial to the value you want to be memorized.
3. Choose **Edit menu> Memorize>** *choose a menu item*.

Posing Parameters

The following Parameter Dials are available for posing. Since some properties don't apply to certain body parts, the number of dials change as you select different parts.

Twist

Twist rotates a body part along its own axis. For example, you can use twist on the head and neck to turn the head. When you use it on the chest and abdomen, Twist manipulates the figure's supple spine. Twist is also useful in the shoulder and forearm, where it turns the hand palm up.

Bend

Bend rotates a part on its major axis. All parts—except the shoulder and hand—bend forward and back. The shoulder and hand bend up and down.

Side-to-Side

Side-to-Side rotates the part perpendicular to its major axis. All the parts on the spine allow some side-to-side motion. The thigh has a lot of side-to-side motion, but the knee has very little.

Turn

The Turn dial appears for the feet only, rotating them outward or inward. Turning both feet in makes a figure pigeon-toed.

Front-to-Back

Front-to-Back is used with the shoulders and collars. It rotates them forward or back, perpendicular to their major axis.

Posing Parameters for the Body

The following Parameter Dials are available for entire figures.

If you are working with more than one figure, remember to select the one you want to move before dragging a dial.

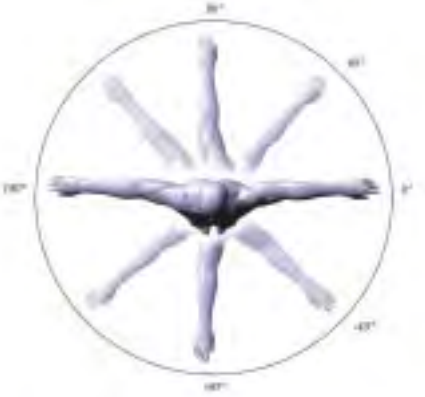
xRotate

xRotate rotates a figure around the x axis at the figure's hip. Drag the dial to the right to rotate the figure face down.

xRotate, side view.

yRotate

yRotate rotates a figure around the y (vertical) axis. This works like the Twist tool, except that you twist the entire figure. Drag the dial to the right to rotate a figure counter-clockwise.



yRotate, top view.

zRotate

zRotate rotates a figure around the z axis. Drag the dial to the right to lean a figure to the right.

zRotate, front view.

xTran

xTran moves a figure horizontally (in the x dimension). Drag the dial to the right to move a figure in that direction.

yTran

yTran moves a figure vertically (in the y dimension). Drag the dial to the right to move a figure up in the window.

zTran

zTran moves a figure toward or away from you (in the z dimension). Drag the dial to the right to move a figure toward you.

Symmetry

The Symmetry command allows you to copy pose characteristics from one side of the body to the other. This is a great time saver. Pose one arm or leg, then use symmetry to immediately put the other arm or leg in a matching pose.

Before and After Symmetry: Right to Left.

Another form of symmetry swaps the pose characteristics of the right and left. You can swap the arms, legs or both.

Use Symmetry: Swap Right and Left to mirror the pose.

You can apply symmetry to both the arm and the leg (Left to Right or Right to Left), or just the arm or just the leg. You can also use Symmetry to straighten the torso.

To apply symmetry:

1. Choose **Figure menu> Symmetry**> *select a symmetry option*.
2. A dialog appear asking if you want to copy the joint zone's setup also. Unless you are working with a custom figure, click No (the default). For complete details on using joint zones, refer to "Figure Joints and Blend Zones" on page 278.

Drop to Floor

You can place a figure in any position, such as a mid-air leap. There's nothing wrong with having your figure in the air, but if a floating figure doesn't match your plans for the image, you can bring a figure to the studio floor with the Drop to Floor command.

To drop a selected figure to the floor:

- Choose **Figure menu> Drop to Floor**. This brings the lowest part of the body to contact the floor.

To display the floor:

- Choose **Display menu> Guides> Ground Plane**.

Copying and Pasting

Poser's Copy and Paste feature lets you copy a pose from one body part and paste it onto another, or from one figure to another.

In this example, the Shoulder's pose was copied to the Abdomen.

Here, the man's pose was copied to the female figure.

You can even copy a pose from one type of body part to a different type of part. For example, you could copy a twisted arm and paste it onto a shin, to achieve the same

amount of twist. However, note that all parameters from the copied body part are pasted to the new body part, so the results may not be ideal.

To copy and paste a pose to another body part:

1. Pose a body part.
2. With the body part selected, choose **Edit menu> Copy**, or Command/Ctrl-C.
3. Click to select the body part you want to copy the pose to. This can be a body part on the same figure, or a body part on another figure in the studio.
4. Choose **Edit menu> Paste**, or Command/Ctrl-V.

   The pose is copied to the new body part.

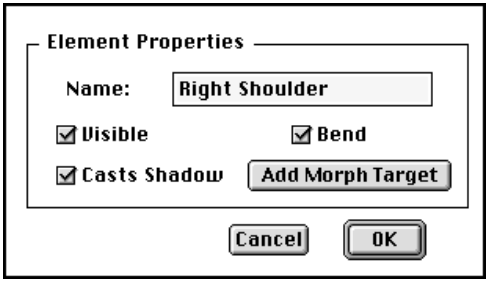
When you copy a pose from one limb to its opposite, you do not achieve the mirrored position; the translated position of the copied limb equals the translated position of the pasted limb.

Element Properties

Poser offers various options for manipulating and displaying body parts. You can change their name, make them invisible, and stop them from bending.

To change a body part's properties:

1. Select the part you want to work with.
2. Double-click the part or choose **Object menu> Properties**. The Properties dialog appears.



The Element Properties dialog.

3. Set any of the following options in the Element Properties dialog:
   - **Name**: rename the part.
   - **Visible**: toggle the part visible or invisible. In an animation, you cannot make an element visible in one frame, but hidden in another.
   - **Casts Shadow**: toggle shadow casting for the part.
   - **Bend**: toggle the part bendable or not. For details, refer to "About Bending" on page 127.
   - **Add Morph Target**: add a custom morph target to the part. For details, refer to "Adding Custom Morph Targets" on page 156.
4. Click OK to close the dialog.

About Bending

All body parts are separate elements, or objects. As you change their positions, Poser tries to maintain the continuity of the body as a whole. The arm should connect to the body smoothly, and so on for every transition between parts.

Poser achieves smooth transitions in any pose by bending body parts where they join. However, the bending information for the human body may not work well for a body part replaced with a prop. You can disable bending for the body part replaced by the prop. For more information on bend, refer to "Replacing a Body Part with a Prop" on page 173.

When rendering an image created with the Bend option disabled, parts may appear disjointed. This may be useful for special effects, such as creating a robotic form.

Posing Hands

In the Figures palette, models in the People sub-category have fully articulated hands; when you move a finger, its knuckle joints bend naturally.

Hands for all other models can be posed using the preset Hand positions in the Libraries palette.

The Left and Right Hand Cameras use the hand as their center of rotation, making it easier to create precise hand poses.

Use the Hand Cam to easily view a figure's hand.

Use the same Editing Tools to pose a hand as you use on the rest of the body. The hand's fingers are body parts just like an arm or leg; once you select them, you can rotate, twist, or position fingers just like any other body part.

Locking Hand Poses

After you finish posing, you can use the Lock Hand Parts option to protect the hand's pose while you work on the rest of the figure.

To lock an articulated hand pose:

1. Click the hand you want to lock.
2. Choose **Figure menu> Lock Hand Parts**. The hand is locked in place. No finger parts can be selected or repositioned.

   This command is only available with figures from the People sub-category.

Using Parameter Dials on Hands

When you select the main potion of a hand—labeled Left/Right Hand in the Current Elements menu—a special set of hand Parameter Dials appear. These dials let you quickly refine hand poses.

Grasp

This dial lets you control the severity of the clench of the hand. The higher the value, the more closed the hand appears. Higher values create a fist.

Thumb

This dial lets you control the position of the upper thumb. Higher values move the thumb in, toward the rest of the hand; lower values move it away from the hand. You can position the rest of the thumb (the tip and middle of the thumb) separately by selecting them.

Spread

The Spread dial controls the amount of space between the fingers. Higher values spread the hand out, while lower values push the fingers together.

Using the Hand Model

The Left and Right Hand models are designed specifically for posing hands. These models appears as disembodied hands floating in 3D space.

The Hand model.

Hand models are ideal for creating a library of hand poses you can reuse on other figures. When you save a posed Hand model to the library, only the hand appears in the preview.

To access a Hand model:

1. Display the Libraries palette by clicking its handle on the right side of the screen.
2. Select the Figures category.
3. Click the pop-up and choose the Additional Figures sub-category.
4. Double-click either the Left or Right Hand model.

Using Preset Hands

When you're done posing a hand, you can save it as a preset hand pose in the Libraries palette. Hand poses are saved the same way a figure pose is saved.

Note

Preset hands include Basic Hands and Poser 2 Fig Hands. You can only apply Basic Hands to the People and Poser 3 Low Res sub-categories of figures. Poser 2 Fig Hands can only be applied to Poser 2 figures.

To use a hand pose:

1. Click a figure to select it.
2. Display the Libraries palette by clicking its handle on the right side of the screen.
3. Click the Hands category button. If the button is not visible, move the cursor over the category dots at the top of the palette until the Hands icon appears.
4. Double-click the preview of the pose you want to use. A dialog appears asking if you want to apply the hand to the left or right hand.
5. Click either Left Hand or Right Hand button, then click OK.

Posing Faces

Poser's People figures have fully articulated faces, meaning you can position facial muscles such as mouth, eyebrows, cheeks and eyes to create different facial expressions. You'll use the Parameter Dials to pose faces.

Note

Only the People sub-category of figures have posable faces.

When you select the head, a series of face-specific Parameter Dials appears; each dial controls a different aspect of the face. When using these Parameter Dials, keep in mind that you are controlling the muscles in the face. Because an expression is made up of different muscle movements, you need to adjust several parameters to create an expression.

The Face Camera uses a figure's face as its center of rotation, letting you view it from any angle.

Use the Face Camera for posing a figure's face.

Using the Parameter Dials

The normal range of the facial Parameter Dials is 0 to 1. This range represents the normal range of motion of the face and produces realistic expressions. Values above 1 produce an exaggerated pose, like a wide gaping mouth. Values below 0 (that is, negative values) produce the opposite effect of the parameter. For example. a negative Frown value produces a slight smile.

Mouth Parameters

These dials controls a figure's mouth and tongue. Together the dials control most of the muscles in the lower face.

OpenLips

Controls the distance between lips. Positive values spread the lips. Negative values move them closer together.

Smile

Positive smile values raise the corners of the mouth and close the eyes slightly. Negative value produce the opposite effect.

Frown

Positive values drop the corners of the mouth. Negative values produce a slight smile.

Mouth O

When the Mouth O dial is set to 1, the lips are in position to produce the O sound. Positive values pucker the lips. Negative values stretch out the lips.

The Mouth O dial in use.

Mouth F

When the Mouth F dial is set to 1, the lips are in position to produce the F sound. Using positive values, the lower lip tucks up under the upper teeth. With negative values, the lower lip juts out.

Mouth M

When the Mouth M dial is set to 1, the lips are in position to produce the M sound. A positive value presses the lips together. A negative value spreads out the lips.

Tongue T

When the Tongue T dial is set to 1, the tongue and mouth are in position to produce the T sound. Positive values press the teeth together and moves the lower lip down, opening the mouth. Negative values close the mouth and pull the lips together.

The Tongue T dial in use.

Tongue L

When the Tongue L dial is set to 1, the tongue and mouth are in position to produce the L sound. Using positive values, the mouth opens and the tip of the tongue tucks in behind the front teeth. A negative value closes the lips.

Eyebrow Parameters

This set of Parameter Dials control the position of the eyebrows and eyelids. The Eyebrow parameters control most of the muscles in the upper half of the face.

Left/Right Brow Down

Positive values lower the brow down in a straight line. Negative values curves the brow up.

Left/Right Brow Up

Positive values lift the inner brow (that is, the part of the brow closest to the nose) up. Negative values lower the inner brow, producing an angry look.

Worry Left/Right

Positive values move the inner brow up and the outer brow down. Negative values have the opposite effect.

The Worry dials in use.

Blink

When the Blink dial is set to 1, the eye is completely closed. At 0 the eye is completely open. Negative values produce extremely open eyes, producing a horrified look.

Posing Eyes

You can pose the eyes within a face just like any other body part; select them using the Editing Tools and position them using the Parameter Dials. Eyes also appear on the Current Elements pop-up menu.

Character Morphs

The following morph target Parameter Dials are available with the Character models:

Brow: a higher value pushes the eyebrows out.

BumpNose: a higher value creates a bump on the bridge of the nose

Cheeks: a higher value makes the cheekbones more pronounced.

Chin: a higher value makes a more pronounced chin.

EyeRoundness: a higher value makes the eyes more round.

FlatFace: a higher value makes the face flatter.

FlatNose: a higher value makes a flatter nose.

HeartFace: a higher value makes a more heart-shaped face.

LashLengh: a higher value makes longer eyelashes.

LipSize: a higher value increases the volume of the lips.

LongFace: a higher value makes a longer face.

PointedNose: a higher value makes a more pointed nose.

RoundFace: a higher value makes a rounder face.

RoundNose: a higher value makes a rounder nose.

SquareFace: a higher value makes a more square-shaped face.

Faces and Phonemes

A *phoneme* is a linguistic term for the position of the lips, teeth, and tongue as they make sounds. To produce certain letter sounds, the mouth and tongue must be in specific positions. For example, to produce the letter A sound, the mouth is open, and the tongue is behind the lower teeth. A series of phonemes strung together produce speech.

A series of examples of Phonemes.

In Poser, you can create the appearance of phonemes to create realistic facial animations, simulating speech. This is useful when you attach sound to figure. By setting up different animation frames with different phonemes you synchronize the face to the sound.

There are several preset phonemes included in the Faces: Phonemes sub-category on the Libraries palette. You can use these presets to help you get started. Refer to "Loading from the Libraries Palette" on page 33 for more on retrieving phonemes from the Libraries palette.

Using Preset Faces

Like hands, you can save face poses into the Libraries palette. Once saved, you can easily apply a face to any number of figures. Refer to "Saving to the Libraries Palette" on page 34 for more information.

Posing Animals

You can pose animal models using the same techniques you use to pose a human figure. Animal models have their own set of IK settings, Bend zones, and Use Limits, so not all the parts act as you may expect. On the Horse model, for example, moving the hip joint toward the ground does not make the horse sit, as it does in the human figure.

All the same Editing Tools and Parameter Dials you use on figures also work on animal models. The Current Figure menu, at the bottom-left of the Document window, lists all the parts that make up the animal.

An example of posing a dog figure.

Posing Animal Heads

Several animal models have fully articulated heads. For example, the dog model has a mouth and ears that can be posed. Like human figures, use the Parameter Dials to pose the features on an animal model's head.

Posing a dog's eyes and mouth.

When you click an animal model's head, a set of special Parameter Dials appear that control all the posable parts of the head. Each model has different morph target parameters. To find out which parameters are posable, click on the head.

Pointing Body Parts

You can aim body parts directly at other figures, body part, or props using the Point At command. You may find this feature handy, for example, to illustrate a figure following her hand with her eyes.

To point a body part directly at an object:

1. In the Current Element popup, select the element you want to point.
2. Choose **Obejct menu> Point At**. A scene selection dialog appears.
3. In the list of objects, click to select the figure, body part, or prop you want to point the element at, then click OK.

   The element points at the object, and a Point At Parameter Dial appears for the element. You can adjust this parameter as needed. At 1, the element is pointed completely at the object. At 0, the element is not pointed at the object.

To disable the pointing of a body part:

1. In the Current Element popup, select the body part that is pointing.
2. Choose **Obejct menu> Point At**.
3. In the dialog that appears, click None.

Locking Objects

You can lock body parts or an entire figure, so that the editing tools and parameter dials don't affect it. This feature is helpful when you want to protect a pose while you work on the rest of the figure

To lock a figure or body part:

1. Click the Current Element pop-up and choose the figure or element you want to lock.
2. Choose **Object menu> Lock Actor**. The actor is locked when this menu item is checked.

When a body part is locked, you can still manipulate other parts and the figure. If you lock an entire figure, you can still manipulate its parts, but the figure itself cannot be moved.

Auto Balance and Posing

The Auto Balance feature is a valuable tool for creating realistic poses. When Auto Balance is enabled, Poser calculates the mathematical "weight" for a figure and then maintains it. In the following example, there is more weight in the figure's hip or center portion than in the upper torso.

3. As you pose a figure, Auto Balance adjusts body parts to maintain the original weight distribution. This results in more

natural looking poses, without requiring several position adjustments.

Posing using Auto Balance.

When using Auto Balance, small subtle motions result in better poses than do large motions. Large motions may create drastic results. If this happens, use **Edit menu> Restore** to reset body parts' positions.

To enable the Auto Balance feature:

- Choose **Figure menu> Auto Balance**.

Saving Poses

The Libraries palette lets you save poses and animations. Saved poses are readily accessible, so you can apply them to the current figure at any time.

You can save poses either temporarily—just during the session—or indefinitely—to use them in other projects. You can also save a set of poses as a morph target.

Saving Poses in the Libraries Palette

When a pose is saved in the Libraries palette, all the parameters are saved.

To save a pose to the Libraries palette:

1. To display the Libraries palette, click its handle on the right side of the screen.
2. Click the Poses category button. If the button is not visible, move the cursor over the category dots at the top of the palette until the Poses icon appears.
3. Click the Add to Library (+) icon. A dialog appears.
4. If you want to specify parts of the pose to include or not include, click the Select Subset button. In the Hierarchy Selection list that appears, deselect any items that you don't want to include, then click OK.
5. Enter a name for your library item and click OK.
6. A dialog appears asking if you want to save a Single frame or a multi-frame animation.

You can save a still or the entire animation.

- If you select the Single frame option, the current pose is saved.
- If you select the Multi-frame animation option, you can specify a range of frames to save.

Choose either Single frame or Multi-frame animation from the dialog and click OK.

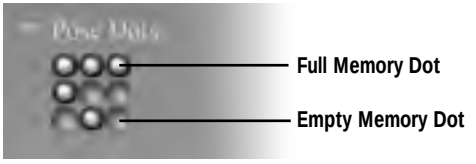
A rendering of the pose appears in the Libraries palette. If you saved a multi-frame animation, the number of frames appears in the Library preview.

Using the Pose Memory Dots

Use the Pose Memory Dots to store a figure's position during a session. You can store up to nine different poses. Memory dots are saved with the file, so your figure positions are available the next time you open the file.

To save a figure position to a memory dot:

1. Set up a figure pose.
2. Click the pop-up menu above the memory dots and choose Pose Dots.
3. Click an empty memory dot. The figure position is stored into the dot you clicked.



Use the Pose Dots to save poses.

To recall a stored position:

- Click on a memory dot. The figure moves to the stored pose.

Using Poses from the Libraries Palette

When you use a single frame pose from the Libraries palette, Poser applies it to the current frame.

When you use an animation from the library, Poser applies it to a series of frames, beginning with the current frame, and extends the full length of the applied multi-frame pose. Make sure you have enough frames ahead to accommodate the multi-frame pose. Otherwise, Poser automatically extends the length of the animation to accommodate the poses.

To load poses from the Libraries palette:

1. To display the Libraries palette, click its handle on the right side of the screen.
2. Click the Poses category button. If the button is not visible, move the cursor over the category dots at the top of the palette until the Poses icon appears.
3. Click the sub-category pop-up and choose the type of pose set you want to apply.

   If you want to apply an animated pose to your figure, use the Animation Sets sub-category.
4. Double-click the preview of the pose you want to use.

5

Body Shaping

Human bodies come in all shapes and sizes. Starting with any Poser model, you can adjust its proportions to create a body of any type, from lifelike to absurd.

Poser lets you shape the body any way you like.

Poser 4 includes several features for body shaping. You can select from a library of morph targets to reshape any body part. You can create your own morph targets using the deformer tools. The Grouping tool lets you target specific sections of elements and props.

With the Scale tool, you can scale the body or its parts in one, two, or all three dimensions. Scaling all three dimensions maintains the body or object's proportions. Scaling in one or two dimensions changes the actual shape. For example, increasing the height scale makes a figure taller. Increasing only the width and depth can make a figure stout—even rotund.

You can create exaggerated body types.

With the Taper tool, you can taper parts of the body so they make smooth transitions.

You can customize figures by replacing body parts with props you've imported into your scene. You can also attach a prop to a figure, such as a sword or a pair of wings.

As you create new bodies, you can save them to the Figures category in the Libraries palette. The library is the easiest way to store and retrieve body shapes.

General Characteristics

Selecting Figures from the Library

The Figures category of the Libraries palette provides many figures to work with, including various types of males, females, children, skeletons, stick figures, and animals.

Poser figures are divided into different categories of older and newer Poser models.

Examples of the skeleton, stick figure and Poser 2 models.

Models in the Poser 2 figure category are available in high resolution and low resolution versions. Low resolution models use less memory and display more quickly, while high resolution models offer better detail. High resolution models have the word "Hi" in their titles and low resolution models have "Lo".

Newer Poser models are more detailed and have fully articulated hands and faces. The Animals category also contains fully articulated animal models.

Some of the People and Animal figures.

You can find the most recently Poser figures in the "People" sub-category of the Figures library. In addition to fully articulated hands and faces, they include extra morph targets, and are optimized to work with Poser's library of clothing. The Poser People models that can change clothing begin as nudes. The People sub-category also includes Robots.

You can use older and newer Poser models together to optimize your workflow. For example, while posing, you can use a lower resolution model from a Poser 2 category to maximize the response time of your computer. Then when you're ready to render, make a movie, or export a model, switch to a high resolution model from the People sub-category.

To change the figure type:

1. Display the Libraries palette.
2. Click the Figures category button. If the button is not available, move the cursor over the dots at the top the palette until the Figures icon appears, then click the mouse button.
3. Click the sub-category popup menu and choose the sub-category of figures you want to use.
4. Double-click the preview of the figure you want to use.

Genitalia

The male nude model is anatomically correct. To turn display of his genitals on or off, choose **Figure menu> Genitalia**.

Figure Height

Poser provides several figure heights as starting points. You can modify any of these toward the body shape you want.

To set figure height:

- Choose **Figure menu> Figure Height**> *select a height*.

Using the Color Tool

You can use the Color tool to change a figure or its clothing's color. The Color tool changes the color of the entire figure; you cannot use it on individual body parts.

The Color tool.

To change a figure's color:

1. Click to select the Color tool, then click the figure whose color you want to change.
2. Drag the dropper icon over the color picker that appears. Release the mouse button when you select the desired color.

Shaping Individual Body Parts

Shaping individual parts can significantly change the appearance of the body. Enlarge the abdomen to give the model a big belly. Stretch the head wider to give the model a broad face.

Shaping an individual body part.

Shaping is easiest when a figure is in the default pose—with arms out, facing the camera. In this pose, you can clearly see the proportions of the separate elements and the effects of your changes.

Using the Shaping Tools

The easiest way to shape a part is to choose the Scale or Taper tool, click on the element you wish to adjust, and simply drag it. For more precise control in each dimension, use the Parameter Dials.

Scale

Drag in (toward the selected element) to reduce the scale. Drag out (away from the element) to increase the scale.

- You scale the three dimensions to varying degrees, depending on how you drag. Drag laterally to scale width and depth (x and z dimensions). Drag vertically to scale height (y dimension).
- To scale proportionally in all three dimensions, hold down the Shift key as you drag.

If the result is not what you expected, choose **Edit menu> Undo**.

For more precise control of the scale in each dimension, use the Parameter Dials.

You can animate the scaling of a body or body part. For details on animating, refer to "Creating Animations" on page 209.

Taper

Taper adjusts the scale of one end of an element only—the other end does not change. Taper affects the end of the element that is distant from the center of the body.

Drag to the right to increase the taper. Increasing the taper shrinks the end of the element farther from the center of the body. Drag to the left to decrease the taper. This "flares" the end of the element.

Using the Parameter Dials

When you click a body part, the Parameter Dials change to display the appropriate scaling controls.

Taper

Taper adjusts the scale of one end of an element only—the other end does not change. Drag to the right to increase taper. The end of the element farther from the center of the body shrinks. Drag to the left to decrease the taper.

Scale

Scale adjusts all three dimensions proportionally. Drag the dial to the right to increase the scale.

xScale

xScale adjusts the width scale (x dimension). Drag the dial to the right to increase the scale in this dimension.

yScale

yScale adjusts the height scale (y dimension). Drag the dial to the right to increase the scale in this dimension.

zScale

zScale adjusts the depth scale (z dimension). Drag the dial to the right to increase the scale in this dimension.

Breast Size

The female model's chest includes the BRLarge and BRSmall Parameter Dials for changing the breast size. Drag the BRLarge dial to the right to increase breast size. Drag the BRSmall dial to the right to decrease breast size.

Symmetry

You can save a lot of time and effort with the Symmetry command. When you shape an arm or leg, you can use Symmetry to give the other side the exact same proportions.

You can apply symmetry to both an arm and leg (Left to Right or Right to Left), or just an arm or leg. You can also use Symmetry to straighten the torso.

To apply symmetry:

1. Choose **Figure menu> Symmetry**> *select an option*.
2. A dialog appear asking if you want to copy the joint zone's setup also. Unless you are working with a custom figure, click No (the default). For complete details on using joint zones, refer to "Figure Joints and Blend Zones" on page 278.

Scaling the Body as a Whole

Scaling the body simply changes its size. To scale the figure, select the Scale tool, select the Figure Ring for the appropriate figure, and drag in the Document window.

Scaling the entire body using the Figure Ring.

For details on the Scale tool, refer to "Scale" on page 140.

Body Size and Uniform Scaling

A figure's size is significant only in relation to other figures or objects in the scene. If you are posing a single figure, uniform scaling of the body is not necessary. Instead, to make a single figure larger or smaller in the window, scale the camera.

If you are working with two or more figures and you want to make a figure appear to be in the distance, use the Translate In/Out tool to move it back in the studio space.

To make a figure a certain size for a final rendering, you can set the Rendering Options to render at a specific resolution. For details on rendering, refer to "Setting Up a Render" on page 260.

Using Parameter Dials

The Parameter Dials are particularly useful for body shaping. The values show the scale in that dimension as a percentage. The normal scale of a Poser model is 100%.

Scale

Scale adjusts all three dimensions proportionally. Drag the dial to the right to increase the scale.

xScale

xScale adjusts a figure's width (x dimension).

yScale

yScale adjusts a figure's height (y dimension).

zScale

zScale adjusts a figure's depth (z dimension).

Copying and Pasting

Poser's new Copy and Paste feature lets you copy a shaped body part and paste the shaping Parameters onto another, or from one figure to another.

For example, you could resize a hand, and then copy the new size to the opposite hand on the figure, to another figure's hand. You can even copy a new shape to a different type of body part, such as a foot or the head.

To copy and paste a shaped body part:

1. Manipulate a body part with any of the shaping tools or parameters.
2. With the body part selected, choose **Edit menu> Copy**, or Command/Ctrl-C.
3. Click to select the body part you want to copy to. This can be a body part on the same figure, or a body part on another figure in the studio.
4. Choose **Edit menu> Paste**, or Command/Ctrl-V.

   The parameters are copied to the new body part.

Using the Deformer Tools

Poser's deformer tools are used to shape body parts and figures into new and interesting forms. You can stretch a figure's nose, make a figure's belly bounce as it walks, add ripples to clothing, or create a splash. You can animate the deformers both in their settings and positions. You can also use the deformers to create custom morph targets.

Examples of deformed objects.

When working with the deformers, it's best to use the full tracking display style so you can see the effects of the deformer as you manipulate it.

To turn full tracking on:

- Choose **Display menu> Tracking> Full Tracking** or click the Full Tracking button on the upper-right corner of the document window.

Deformer tools do not appear when a scene is rendered in Poser.

The Magnet Deformer

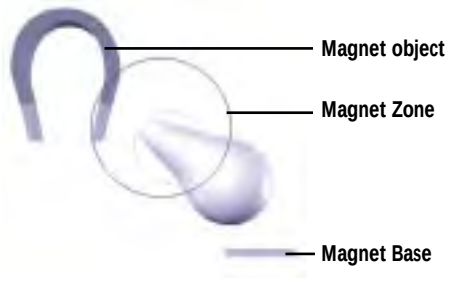
The Magnet deformer distorts an object by creating a virtual magnet which stretches it. The Rotate, Twist, Translate, and Scale tools can be used on the Magnet deformer, as well as several specialized Parameter Dials.

A sphere deformed by the Magnet.

To create a Magnet deformer:

1. Select the object you want to deform.
2. Choose **Object menu> Create Magnet**.

When you create a magnet, three Magnet objects, which together create the deformer, are added to your scene.



The three parts of the Magnet deformer.

- The *Magnet object* defines the behavior of the actual magnet.
- The *Magnet Base* defines the zero point of the area to be deformed. When you move the Magnet Base, the Magnet object moves with it.
- The *Magnet Zone* defines the area to be deformed. You can move and shape the Magnet Zone to fit your needs.

Using Editing Tools with Magnets

You can use the same tools you use for posing to position the magnet objects.

To edit a magnet object:

1. Select the magnet object from the Current Element popup.
2. Select the editing tool you want to use.

For all of these tools, when you move the Magnet Base, the Magnet object moves along with it.

The editing tools that can be used on Magnet object are:

- **Rotate** rotates a Magnet object around its axis in three dimensions.
- **Twist** rotates a Magnet object along its own axis.
- **Translate/Pull** moves the Magnet object horizontally or vertically (in the x and y dimensions), depending on how you drag.
- **Translate In/Out** moves the Magnet object in or out from the center of the studio.

- **Scale** increases or decreases the size of the Magnet object.

Using Parameter Dials with Magnets

When a Magnet object is selected, you can use the Parameter Dials to precisely control a it's position and orientation:

- **Scale** adjusts all three dimensions proportionally. Drag the dial to the right to increase the scale.
- **xScale** adjusts the width scale (x dimension). Drag the dial to the right to increase the scale in this dimension.
- **yScale** adjusts the height scale (y dimension). Drag the dial to the right to increase the scale in this dimension.
- **zScale** adjusts the depth scale (z dimension). Drag the dial to the right to increase the scale in this dimension.

Note

xScale, yScale, and zScale are not used with the Magnet Base object.

- **xRotate** rotates the Magnet object around the x axis.
- **yRotate** rotates the Magnet object around the y axis.
- **zRotate** rotates the Magnet object around the z axis.
- **xTran** moves the Magnet object in the x dimension.
- **yTran** moves the Magnet object in the y dimension.
- **zTran** moves the Magnet object in the z dimension.

Magnet Properties

Just like body parts, you can control the properties of the Magnet objects.

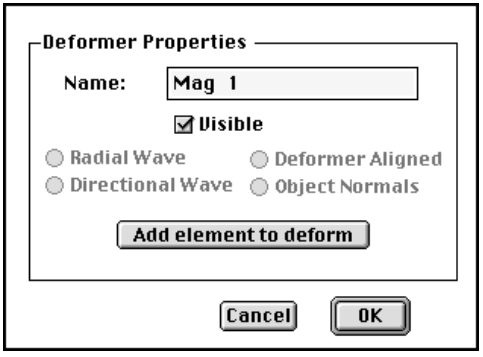
To edit a Magnet object's properties:

1. Choose the Magnet object from the Current Element popup.
2. Choose **Object menu> Properties**.

   The Properties dialog appears.

The Properties dialogs differ depending on which Magnet object is selected.

Magnet Object Properties



Magnet object properties.

The options in the Magnet Properties dialog are:

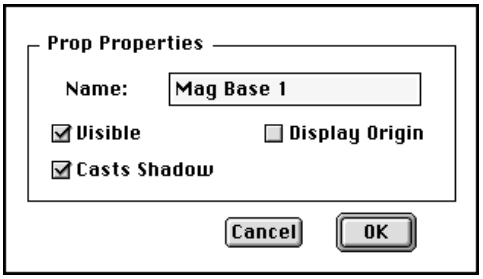
- **Name**: rename the Magnet object. This option is helpful when you are working with several magnets.
- **Visible**: toggle the Magnet visible or invisible.

- **Add Element to deform**: add another element to be affected by the magnet. If you click this button, select an element in the Hierarchy list that appears, then click OK.

Note

In order for this feature to work, the added element must be in the Magnet Zone, or it won't be deformed. You can move or scale the Magnet Zone object to bring the element into the zone.

Magnet Base Properties

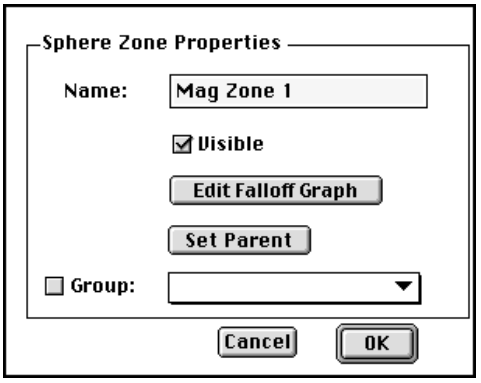


Magnet Base properties dialog

The options in the Magnet Base Properties dialog are:

- **Name**: rename the Magnet Base object.
- **Visible**: toggle the Magnet Base visible or invisible.
- **Display Origin**: display the Magnet Base's axis. This feature is useful because the Magnet object translates on the Magnet Base's axes, not the ground floor axes. So for example, if you use a Parameter Dial to move the Magnet along the y axis, it moves along the *base's* y axis, not the studio's y axis.

Magnet Zone Properties



Magnet Zone properties dialog

The options in the Magnet Zone Properties dialog are:

- **Name**: rename the Magnet Zone object.
- **Visible**: toggle the Magnet Zone visible or invisible.
- **Edit Falloff Graph**: edit the Magnet Zone's falloff (the area where the deforming ends or "falls off"). Click this button, then edit the graph that appears.
- **Set Parent**: set a parent object for the Magnet Zone. Click this button, select an element in the Hierarchy list that appears, and click OK.
- **Group**: deform a grouped part of the selected element. Enable the checkbox, then select one or more groups from the

popup. A group is selected when a check appears next to it.

Tip

To get an optimal 3D view of the magnet zone, change its display style to Wireframe. Select the Magnet Zone, select Element Styles from the Document Display Style popup, then click the Wireframe icon.

Locking Magnets

The Lock feature can be especially helpful for the Magnet Zone objects. Once you have a zone carefully positioned to get the effect you want, you can lock it so that it isn't accidentally moved. For details, refer to "Locking Figures and Body Parts" on page 159.

Tutorial: Using the Magnet Deformer

This short tutorial demonstrates how easy it is to use the Magnet deformer. For a simple demonstration, we'll use a magnet on an empty ground plane.

To use the magnet deformer:

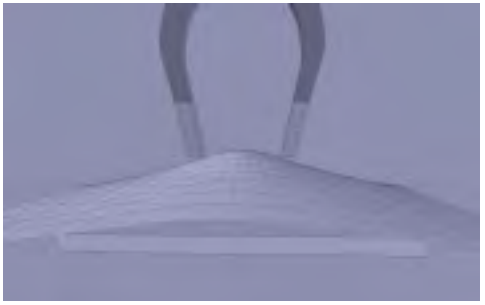
1. To remove any figures from the scene, select the figure in the Current Figure popup, then choose **Figure menu> Delete Figure**.
2. Choose **Display menu> Guides> Ground Plane**, then click the ground plane to select it.
3. If the Display Shadows control is on, turn it off by choosing **Display menu> Ground Shadows**.
4. Choose **Object menu> Create Magnet**. The Magnet, Magnet Base, and Magnet Zone objects appear.

   The Magnet object scales to a size bigger than the object it has been created for, so in this case it is quite large. For a smaller body part or prop, the magnet would not appear so large.
5. Now you'll probably want to zoom out a little. Drag the X and Z camera control up until the entire ground plane is showing in your Document window.

The X and Z camera control.

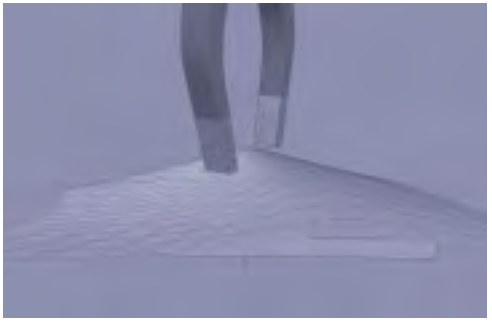
6. Click the Translate/Pull tool, then click the Magnet object.

7 Drag the magnet up, down, and side-to-side. The ground plane follows the magnet around.



Translating the Magnet object.

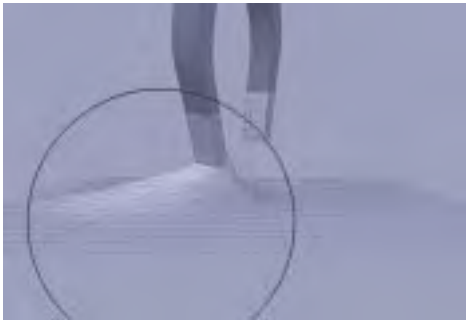
8 Click the Rotate tool, and rotate the Magnet object around. The ground plane rotates around the center of the Magnet Base object.



Rotating the Magnet object.

9 In the Current Element popup, choose Mag Zone 1 to select the Magnet Zone object.

10 Drag the Scale Parameter Dial for the Magnet Zone and scale the zone to about 50%. Now only the portion of the ground plane within the magnet zone is deformed. Experiment with the editing tools and Parameter Dials on the zone. For example, translate the zone to the right to move the area being deformed.

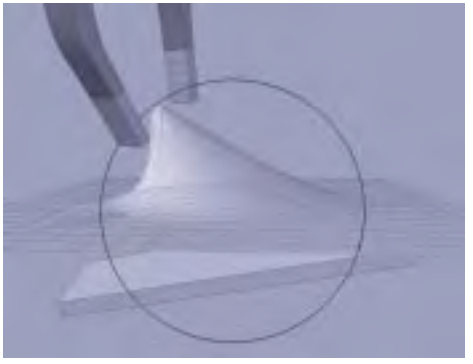


Translating the Magnet Zone object.

11 With the Magnet Zone still selected, choose **Edit menu> Restore> Element**. The zone returns to its original size and shape.

12 Choose Mag Base 1 from the Current Element popup.

13 Using the Editing tools or Parameter Dials, experiment with scaling, rotating, and translating the Magnet Base object.



Rotating the Magnet Base object.

The Wave Deformer

The Wave deformer distorts an object by creating a wave path for it. The Rotate, Twist, Translate, and Scale tools can be used on the Wave deformer, as well as several specialized Parameter Dials.

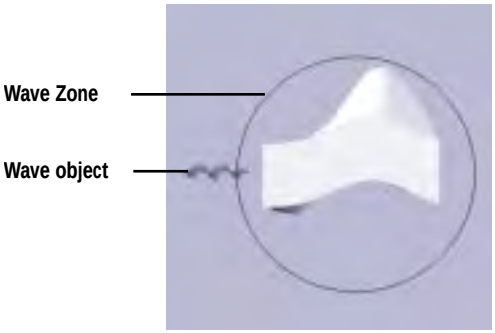
A cube distorted by the Wave deformer.

To create a Wave deformer:

1. Select the object you want to deform.
2. Choose **Object menu> Create Wave**.

When you create a Wave deformer, two wave objects, which together create the deformer, are added to your scene:

- The *Wave object* defines the behavior of the actual wave.
- The *Wave Zone* defines the area to be deformed.



The two parts of the Wave deformer.

Using Editing Tools with Waves

You can use the same tools you use for posing to position the wave objects.

To edit a wave object:

1. Select the wave object from the Current Element popup.
2. Select the editing tool you want to use.

The editing tools that can be used on Wave objects are:

- **Rotate** rotates a wave object around its axis in three dimensions.
- **Twist** rotates a wave object along its own axis. Twist has no effect on the radial wave.
- **Translate/Pull** moves a wave object horizontally or vertically (in the x and y dimensions), depending on how you drag.

- **Translate In/Out** moves a wave object in or out from the center of the studio.
- **Scale** increases or decreases the size of a wave object.

Using Parameter Dials with Waves

When a wave object is selected, you can use the Parameter Dials to precisely control a wave's position and behavior.

The Parameter Dials available for both the Wave and Wave Zone objects are:

- **Scale** adjusts all three dimensions proportionally. Drag the dial to the right to increase the size of the wave object.
- **xRotate** rotates the wave object around the x axis. For this parameter to affect the Wave Zone, the zone must be disproportionately scaled (not perfectly round).
- **yRotate** rotates the wave object around the y axis. For this parameter to affect the Wave Zone, the zone must be disproportionately scaled (not perfectly round).
- **zRotate** rotates the wave object around the z axis. For this parameter to affect the Wave Zone, the zone must be disproportionately scaled (not perfectly round).
- **xTran** moves the wave object in the x dimension.
- **yTran** moves the wave object in the y dimension.
- **zTran** moves the wave object in the z dimension.

The Parameter Dials available *only* for the Wave object are:

- **Phase** defines the position of the wave in the infinite time. Use this dial when you are animating waves.
- **Amplitude** defines the wave's height.
- **Wavelength** defines the distance from one wave crest to another.
- **Stretch** defines the amount of stretch for each wave.
- **Amp Noise** defines the randomness or "noise" of the wave pattern's amplitude.
- **Freq Noise** defines the randomness or "noise" of the wave pattern's frequency.
- **Sinusoidal** defines the size of the sine wave pattern.
- **Square** defines the shape of the wave pattern. Drag the dial to the right to create square-shaped waves.
- **Triangular** defines the shape of the wave pattern. Drag the dial to the right to create triangle-shaped waves.
- **Turbulence** defines the roughness of a wave pattern. Drag the dial to the right to create jagged, or turbulent waves. Drag the dial to the left to create a smooth wave patter.
- **Offset** controls whether the wave pattern is above, below, or across the wave's origin. Drag the dial to the right to bring the wave pattern above the origin. This control is handy, for example, when you want to keep clothing from deforming into a figure.

The Parameter Dials available *only* for the Wave Zone object are:

- **xScale** adjusts the width scale (x dimension). Drag the dial to the right to increase the scale in this dimension.
- **yScale** adjusts the height scale (y dimension). Drag the dial to the right to increase the scale in this dimension.
- **zScale** adjusts the depth scale (z dimension). Drag the dial to the right to increase the scale in this dimension.

Wave Properties

Just like body parts, you can control the properties of the wave objects.

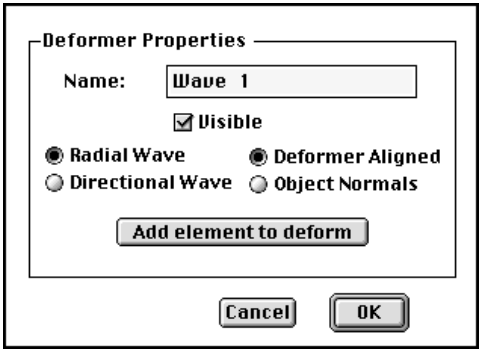
To edit a wave object's properties:

1. Choose the wave object from the Current Element popup.
2. Choose **Object menu> Properties**.

   The Properties dialog appears.

   The Properties dialogs differ depending on which wave object you select.

Wave Object Properties



Wave object properties dialog.

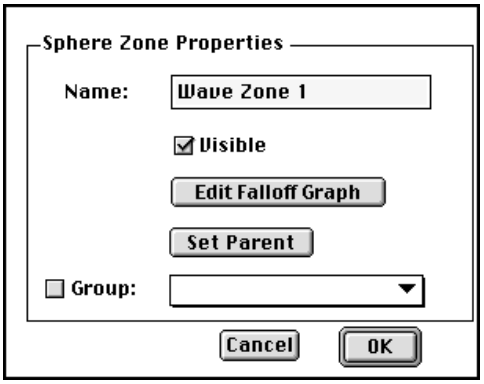
The options in the Wave Properties dialog are:

- **Name**: rename the Wave object. This option is helpful when you are working with several waves.
- **Visible**: toggle the Wave object visible or invisible.
- **Add Element to deform**: add another element to be affected by the wave. If you click this button, select an element in the Hierarchy list that appears, then click OK.

Note

In order for this feature to work, the added element must be in the Wave Zone, or it won't be deformed. You can move or scale the Wave Zone object to bring the element into the zone.

Wave Zone Properties



Wave Zone properties dialog.

The options in the Wave Zone Properties dialog are:

- **Name**: rename the Wave Zone.
- **Visible**: toggle the Wave Zone visible or invisible.
- **Edit Falloff Graph**: edit the Wave Zone's falloff (the area where the deforming ends or "falls off"), Click this button, then edit the graph that appears.
- **Set Parent**: set a parent object for the Wave Zone. Click this button, select an element in the Hierarchy list that appears, and click OK.
- **Group**: deform a grouped part of the selected element. Enable the checkbox, then select one or more groups from the popup. A group is selected when a check appears next to it.

Using Morph Targets

A morph target is a custom Parameter that is added to a body part so you can gradually reshape it. Poser includes several built-in morph targets in its library, and you can build your own.

Use a morph target to make transitional changes in a figure's geometry.

With morph targets, you can easily resize and reshape body parts. Just like any other motion, you can animate your morphs.

For an example of how morph targets you can use, take a look at the Head parameters of a Poser People figure. All the facial parameters, such as Mouth and Tongue settings, were created using morph targets.

Using Morph Targets to Add Ethnicity

Poser now includes morph targets which allow you to easily add ethnic traits to your figures.

Using morph targets to change a figure's ethnicity.

To use an ethnic morph target:

1. Display the Libraries palette.
2. Click the Figures category button. If the button is not available, move the cursor over the dots at the top the palette until the Figures icon appears, then click the mouse button.
3. Click the sub-category popup menu and choose the Characters sub-category.
4. Double-click the preview of the figure you want to use.

   The new figure contains an ethnicity morph target Parameter Dial.

If you want to customize your own figure, the following morph target Parameter Dials are available with the Character models:

Brow: a higher value pushes the eyebrows out.

BumpNose: a higher value creates a bump on the bridge of the nose

Cheeks: a higher value makes the cheekbones more pronounced.

Chin: a higher value makes a more pronounced chin.

EyeRoundness: a higher value makes the eyes more round.

FlatFace: a higher value makes the face flatter.

FlatNose: a higher value makes a flatter nose.

HeartFace: a higher value makes a more heart-shaped face.

LashLengh: a higher value makes longer eyelashes.

LipSize: a higher value increases the volume of the lips.

LongFace: a higher value makes a longer face.

PointedNose: a higher value makes a more pointed nose.

RoundFace: a higher value makes a rounder face.

RoundNose: a higher value makes a rounder nose.

SquareFace: a higher value makes a more square-shaped face.

Using the Superhero Morph Target

Poser includes a full figure morph target in which the entire figure is morphed in various body parts simultaneously to form a superhero character.

The full figure morph target is the Superhero Parameter Dial on the body. Drag to the right to move the figure into the morph.

Creating Custom Morph Targets

You can create your own morph targets in Poser as well as other applications. In this section, you'll learn how to create morph targets in Poser. For details on creating morph targets in other applications, refer to "Creating Custom Morph Targets" on page 272.

You can use one or a combination of the deformers and morph channels (such as the Worry dials on the articulated faces) to create custom morph targets. When you create a morph target on an element, a new Parameter Dial is added.

To create a morph target in Poser:

1. Shape an element using any available morph channels or deformers.

   When you shape multiple elements on a body part and then create a morph target, all the changes in shape are included.

2. With the body part selected in the Current Element popup, choose **Object menu> Spawn Morph Target**.
3. In the dialog that appears, enter a name for the morph target. The target appears in the list of Parameter Dials.

Tip

If you used deformers on the element and don't plan to use them anymore, you may delete them now.

4. Drag the dial to the right to reshape the element toward the morph. Drag the dial to the left to reshape it away from the morph.
5. A value of 0.0 for this dial is the original object, while a value of 1.0 changes the body part to the morph target. A value of 0.5 is halfway between the original object and the morph target. A negative value inverts the vertices.

Note

If you left the deformers and morph channels on the element, the morph target will add on top of them, so the effects will seem doubled. To restore the body part, choose **Edit menu> Restore> Element**.

A custom morph target.

You can use the Hierarchy Editor to delete morph targets from the list of Parameter Dials. For details, refer to "Deleting Objects" on page 292.

Creating Full Figure Morph Targets

You can shape multiple body parts and then save the entire pose as a full figure morph target. The new morph target encompasses all the parameters for that pose, so everything morphs at the same time.

Note

Only morph target channels combine into a full body morph. Deformers are not automatically turned into individual morph targets to be included in the full body morph. Likewise, scales, rotates, and translates are not included in a full body morph.

To create a full figure morph target:

1. Create morph targets for as many body parts as you wish. Refer to "Creating Custom Morph Targets" on page 154 for instructions.
2. Using the newly created morph target Parameter Dials, morph each body part. If you create morph targets but they are set at zero, they won't appear in the full figure morph.
3. With the figure selected, choose **Figure menu> Create Full Body Morph**.
4. In the dialog that appears, enter a name for the morph target.

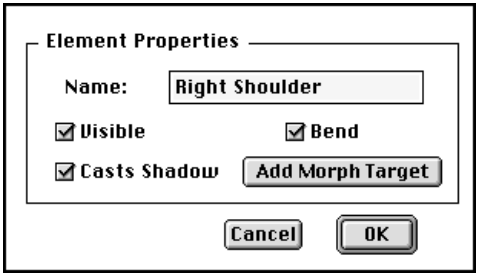
   Now when the Body is selected in the Current Element popup, the morph target appears in the list of Parameter Dials.
5. Drag the dial to the right to reshape the entire body toward the morph. Drag the dial to the left to reshape it away from the morph.

Adding Custom Morph Targets

You can create morph target in other applications, such as Ray Dream Studio, and add them to your figures. For details on creating custom morph targets, refer to "Creating Custom Morph Targets" on page 272. You may also acquire custom morph target files from other sources, such as the Poser forum on the Internet. This section describes how to add custom morph targets to a figure.

To add a custom Morph Target:

1. Select the body part to which you want to add a morph target.
2. Choose **Object menu> Properties**. The Properties dialog appears.



Element Properties dialog.

3. Click Add Morph Target.

The Add Target dialog appears.

Add Shape Interpolation Target dialog.

4. Click Locate to find the geometry file you want to use as a morph target. The file must:
   - Be in OBJ format.
   - Contain the same number of vertices as the original body part.
   - Contain only the body part you are morphing. Do not use a file of the entire figure.
5. Enter a name. The name appears on the morph target Parameter Dial for the selected body part.
6. Click OK to return to the Element Properties dialog. Click OK again to return to the main window.

   A new Parameter Dial is added for the selected body part. Use this dial to morph the body part from its original shape to the morph target. A value of 0.0 for this dial is the original object. A value of 1.0 changes the body part to the morph target.

Saving Morph Targets

You can save a morphed figure in the Libraries palette. It retains all morph Parameter Dials, so the next time you retrieve the figure you can use any morph targets on it.

To save a morphed figure:

1. Choose the Figures category in the Libraries palette.
2. Choose a sub-category from the popup.
3. Click the Add to Library (+) icon at the bottom of the palette.
4. In the dialog that appears, enter a name for your figure and click OK.
5. A dialog appears asking if you want to save a Single frame or a multi-frame animation.
   - If you select the Single frame option, the current pose is saved.
   - If you select the Multi-frame animation option, you can specify a range of frames to save.

   Select either Single frame or Multi-frame animation and click OK.

Using the Grouping Tool

The Grouping tool lets you select and group specific polygons within a body part. With this feature, you can assign surface materials to specified sections of a body part. For details on assigning materials, refer to "Applying Materials to Specific Regions" on page 246.

You can also create new props, deform and morph selected sections of an element, and create custom figures. For complete instructions on creating figures, refer to "Creating Custom Figures" on page 301.

To use the grouping tool:

1. Click the Grouping tool in the Editing menu.

The Grouping tool.

   All figures and objects in the studio become gray, and the Group Edit palette appears. Refer to "Using the Group Edit Palette" on page 158 for complete details.
2. Click to select the body part you want to group.
3. Click individual polygons, or drag the cursor over a group of polygons to select them.
   - To deselect individual polygons, hold down the Control key while clicking or dragging.
   - To select polygons that are currently out of view, either use Wireframe display style or use the camera trackball to change the view of your figure.

Tip

While working with the grouping tool, hold down the Option/Alt key to quickly access the camera rotation trackball.

Using the Group Edit Palette

When the Grouping tool is selected, the Group Edit palette appears. This palette provides several options for working with polygon groups. Use it to create, edit, and delete multiple groups, as well as to create and customize props.

The Group Edit palette.

The options in the Group Edit palette are:

- **Prev** and **Next** view any groups that have been created.
- **New Group** creates a new group. Enter a name for your group in the dialog that appears.
- **Delete Group** deletes the currently selected group.
- **Add All** selects all the polygons in the body part.
- **Delete All** deselects all the polygons in the body part.
- **Invert Group** inverts the selection (select all the currently deselected polygons, and deselect any currently selected polygons).
- **Include Group** includes another named group with your selection.
- **Remove Group** removes another named group from your selection.
- **Include Material** includes another material—such as a joint—from the body part.
- **Assign Material** creates a new material class for the selected polygons.
- **Create New Prop** makes a new prop from the selected group. Enter a name for your prop in the dialog that appears.
- **Spawn Props** makes props for all groups that have been created.
- **Create Perspective UVs** maps the UV texture coordinates for a group. This command can be used, for example, to map an imported background image of a face to a group made from a Poser figure face. The texture coordinates of the face would be mapped onto the image.
- **Reverse Group Normals** reverses the normals of the selected group. This way you can turn environment type objects or other imports inside out to render them interactively as desired.
- **Hide Other Objects** makes other elements and props in the scene invisible,

so you can have an unobstructed view of the element you are grouping.

- **Show Multigroups Faces** displays any polygons that appear in more than one group. When you group a model out for splitting apart, this is a handy way to see if any polygons have been put into more than one group.
- **Show Non-grouped Faces** displays any polygons that are not grouped. When you group a model out for splitting apart, this is a handy way to see if any ungrouped polygons have been left out.

Using Deformers on Grouped Objects

Once you've created one or more groups, you can use the deformer tools to shape and morph them. Groups can be selected by name in the Properties dialog for the Magnet or Wave Zone objects.

To deform a group of a body part:

1. Click to select the body part.
2. Choose **Object menu> Create Magnet** or **Create Wave**.
3. Choose the Magnet Zone or Wave Zone from the Current Element popup.
4. Choose Object menu> Properties. The Sphere Zone Properties dialog appears.
5. Enable the Group checkbox, then select one or more groups from the popup. A group is selected when a check appears next to it.

Now when you use the deformer on a body part, only its grouped part is deformed.

Locking Figures and Body Parts

Once you've shaped body parts or an entire figure to your liking, you can lock them so that they cannot be moved or reshaped further.

The Lock feature is especially useful with deformers. Once you have shaped a Magnet or Wave Zone object to your satisfaction, you can lock it to prevent it from being moved.

To lock a figure or body part:

1. Click the Current Element popup and choose the figure or element you want to lock.
2. Choose **Object menu> Lock Actor**. The figure or body part is locked when this menu item is checked.

When a body part is locked, you can still shape other parts as well as the entire figure. If you lock an entire figure, you can shape its parts, but not the figure itself.

Saving Figures to the Libraries Palette

After you've shaped a body to your liking, you can save the body to the Figures category in the Libraries palette. Your figure is easy to retrieve the next time you want to use it.

If you've modified the figure by replacing a part with a prop or by attaching one or more props, the Figures category maintains these customized geometries. Refer to "Saving to the Libraries Palette" on page 34 for details on saving figures to the library.

6

Props

How Props Work

Poser lets you add props to your scenes. Props are three-dimensional objects that your figures can wear or interact with.

Props can be accessories that give the figure more realism or character—perhaps a wig, moustache, sunglasses, cigar, or briefcase. In some cases, the pose itself depends on the prop—a figure leaning on a cane, tossing a ball, or climbing a ladder.

You can manipulate props as you do other elements. You can change their color, reshape, deform, morph, and apply texture and bump maps to them (if they have UV mapping). Props even cast shadows.

Poser's replaceable geometry feature allows you to replace a body part with a prop. The prop actually becomes part of the body and takes on the posing behavior of the part it replaces. This is a great way to create customized characters. For example, you could replace the figure's hand with a metal hook to create a pirate.

Use props to customize a character.

You can also attach a prop to a specific body part by setting a prop's "parent." This allows you to pose and animate the figure holding a prop, such as wielding a sword or carrying a briefcase.

Props can be attached to body parts.

You can select props from the Props library or import props in several popular 3D file formats. A catalog of props is displayed in the Libraries palette. You can also create your own props in a 3D modeling program, such as Ray Dream Studio.

Props can help add meaning to some poses.

Using Hair

Hair is a special kind of prop that automatically attaches to a figure's head. You can choose from several styles. Once assigned, the hair on a figure moves as you move the head. Poser includes some types of hair which you can morph and shape into new styles. Older Poser hair models are static, so you can't edit them.

Male and female figures with different hair styles.

To add hair to a figure:

1. Display the Libraries palette.
2. Click the Hair category icon. If the icon is not visible, move your cursor over the category dots at the top of the palette until the Hair category appears and click the mouse button.
3. Choose a Hair sub-category from the popup.
4. Double-click the preview of the hair you want to use.

You can edit the hair's scale and position using the Parameter Dials. Some hair models include morph target Parameter Dials which you can use to shape and move the hair. For example, you can make a ponytail swing back and forth for a walking animation.

Morphable hair.

The library also includes a poseable hair model. This model contains several elements for the hair piece. You can the pose the hair element using the same tools you'd use to pose a figure.

Poseable hair.

To use the poseable hair model:

1. Select the Poser female nude from the Figures:People subcategory of the Libraries Palette.
2. Select the Clothing-Female sub-category in the Figures category.
3. Click Long Curls.
4. Click the Create New Figure icon at the bottom of the palette.

The Create New Figure icon.

5. To conform the hair to the figure, choose **Figure menu> Conform To**.

Working with Clothing

Poser includes a whole library of clothing you can use on the nude People figures. The Clothing sub-categories in the Figures library palette includes shirts, pants, shoes, dresses, skirts, etc.

Poser clothing.

Each article of clothing behaves like a regular Poser figure—it includes all the elements and parameters for that portion of the body, and can be posed and shaped just like a figure. For example, shirts have chest, neck, abdomen, and arm elements.

Clothing includes all the elements and parameters for that portion of the body.

When a piece of clothing is added to a scene and defined as a conforming figure, it attaches itself to the base figure, snapping to the similarly named body parts. As the base figure moves, so does its clothing.

To add clothing to a figure:

1. In the Figures category of the Libraries palette, select one of the People figures. If you want, you can pose it at this point, or you can wait until the clothing is added. Custom clothing is optimized to work with the nude People figures, and not the older Poser nudes.
2. Depending on your figure's gender, select either the Clothing-Male or Clothing-Female sub-category in the Figures category.
3. Click the preview of the clothing you want to use.
4. Click the Create New Figure icon at the bottom of the palette.

The Create New Figure icon.

The clothing is added to the scene.

Clothing is added to a scene.

5. Make sure the clothing is selected in the Current Figure popup.
6. To conform the clothing to the figure, choose **Figure menu> Conform To**.
7. If you've already posed your figure, the clothing is now posed in the same position, and will move with the figure if you continue to pose it.

The clothing is conformed to the figure.

Some tight-fitting clothes may not completely cover the figure—there may be spots where the skin shows through. This is easy to fix.

To hide skin under conformed clothing:

1. Choose the Poser figure from the Current Figure popup.
2. Choose the body part that you want to hide from the Current Element popup.
3. Choose **Object menu> Properties**. The Element Properties dialog appears.
4. Disable the Visible checkbox, then click OK.

   The body part is hidden under the clothing.

You can also make body parts invisible using the Hierarchy Editor. For details, refer to "Changing Object Visibility" on page 294.

Using Clothing without a Figure

You may wish to use clothing by itself, not conformed to any figures. For example, you could pose articles of clothing for a catalog. To do this, don't conform the clothing to a figure. You can still pose and shape the clothing as you would a normal figure.

Adding and Importing Props

You can add a prop by either selecting a prop from the Libraries palette, or importing a 3D object created in another application.

Using Props from the Library

The Libraries palette displays all the props available in Poser. You can choose from a number of different types of props, including: a ball, box, cane, cone, cylinder, square, stairs, or torus. You can add any number of basic props to the studio. The only limit is your system's memory.

To apply a basic prop:

1. Display the Libraries palette.
2. Click the Props category icon. If the icon is not visible, move your cursor over the category dots at the top of the palette until the Props category appears, then click the mouse button.
3. Double-click the preview of the prop you want to use.

Importing Props

Any object saved in a 3D format supported by Poser can be imported as a prop. This means that you can use a 3D modeling application, such as Ray Dream Studio, to create an object and then import it into Poser as a prop.

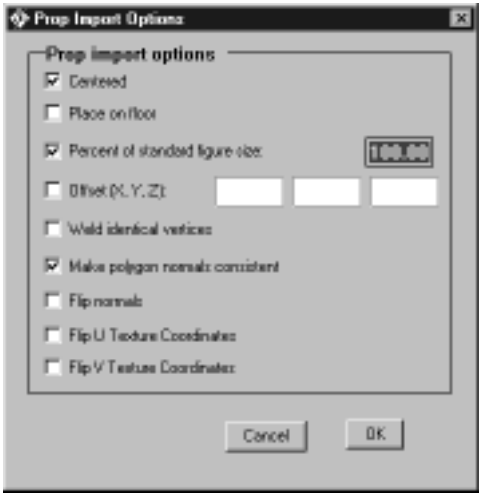
Poser uses a plug-in architecture for file import and export. Using plug-ins, you can extend the types of file formats Poser supports. Refer to the Read Me file and consult the MetaCreations Web site for the latest information.

Poser imports model files in DXF, BVH, 3DMF, Wavefront OBJ, 3D Studio (Windows), and Painter3D (Detailer) formats.

To import a prop:

1 Choose **File menu> Import>** *select the appropriate file format*. The Import dialog appears.

2 Locate and open the file you want to use as a prop. The Prop Import Options dialog appears.



When you import a prop, you can set its scale and location.

3 Enable the desired options:

Centered centers the prop in the middle of the studio.

Place on Floor positions the prop on the ground plane.

Percent of standard figure size scales the prop. Since each 3D program has its own scaling protocol, props are imported in reference to the figure's height. If you scale a prop to 50%, it imports at half the size of the figure's height. Of course, once you add the prop, you can resize it with the Scale tool or Parameter Dials.

When importing DXF format files, Poser considers one DXF unit equal to the male figure's height—about six feet.

Offset sets the prop's exact position in the studio.

Weld identical vertices unifies vertices that are identical on the prop.

Make polygon normals consistent if the vertex normals are supplied on a prop, this option makes polygon normals consistent with vertex normals.

Flip normals reverses all the prop's normals.

Flip U Texture Coordinates reverses the prop's U texture coordinates.

Flip V Texture Coordinates reverses the prop's Vtexture coordinates

4 When you've set the prop import options, click OK.

Poser places the prop in the studio, with the origin located as specified. However, depending on where and how the prop was created and exported, the origin may not be placed where you want it. Refer to "The Prop Origin" on page 169 for more on prop origins.

If you don't see your imported prop in the studio, the prop is probably too large and the camera you're looking through is inside or in front of it. Use the X and Z control to zoom out your view of the studio.

Deleting Props

To delete a prop from the document window:

- Select the prop from the Current Element popup, then choose **Object menu> Delete Prop**.

Working with Props

Props, including hair, function as elements in the studio, so you can control a prop just as you would any body part.

Before you can edit a prop you must select it.

To select a prop:

- Click the prop's center, or select it from the Current Element popup at the bottom-left of the Document window.

To move, rotate, or resize a prop:

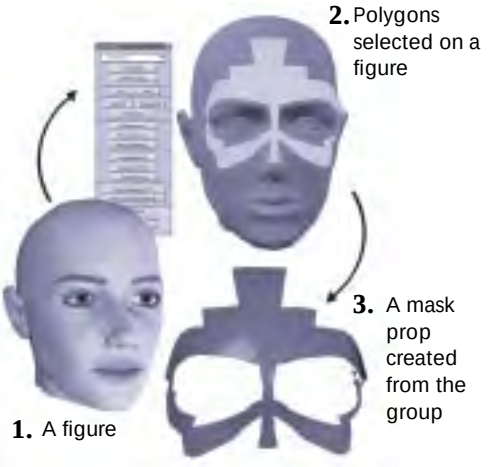
1. Click to select a prop, or choose it from the Current Element popup.
2. Use any of the following tools to move or modify a prop:
   - Use the Rotate or Twist tool to change the prop's orientation. Rotate turns a prop on its origin point. You can change how a prop rotates by adjusting its origin.
   - Use the Translate/Pull or Translate In/Out tool to move the prop in the studio.
   - Use the Scale tool to resize a prop.
   - Use the Parameter Dials for more control over any adjustment. For example, you can use the dials to scale the prop only in the Y dimension.
   - Choose **Figure menu> Drop to Floor** to place a prop on the floor.

Deforming Props

Poser now includes deformer tools, which you can use to stretch, reshape, and deform props. For details, refer to "Using the Deformer Tools" on page 143.

Creating Props

You can use the Grouping tool to select specific polygons on a figure or prop. With this feature, you can create new props. For example, you could create a mask prop from a face.



Use the Grouping palette to create props from body parts.

To create your own prop:

1. Select the body part or prop you want to create the prop from.
2. Click the Grouping tool

The Grouping tool.

   All figures and objects in the studio become gray, and the Group Edit palette appears.

3. Click individual polygons, or drag the cursor over a group of polygons to select them. For complete details on using the Grouping tool, refer to "Using the Grouping Tool" on page 157.
4. Once you have all the polygons selected for your new prop, click the Create New Prop button on the Group Edit palette.
5. Enter a name for your prop in the dialog that appears, then click OK.

   The new prop is listed in the Current Element popup. You can now edit, move, and shape it just like any prop.

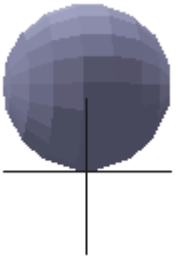
6. To save your prop in the Libraries Palette, refer to "Adding Props to the Library" on page 175.

Creating New Prop Parameters

You can use morph targets to create new parameters for your props. Refer to "Using Morph Targets" on page 152 for complete information.

The Prop Origin

The prop origin appears in the Document window as 3D cross-hairs. The Origin is the prop's center of rotation and scale. When you rotate a prop, it moves around the origin point. When you scale a prop, it grows or shrinks from the origin point.



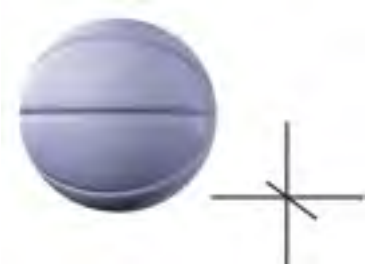
The prop origin appears as an X, Y, and Z cross-hair.

You can display the prop origin by choosing **Object menu> Properties** and enabling the Display Origin checkbox.

Changing the Prop Origin

When a prop is selected, three Parameter Dials for moving the origin are available—originX, Y, and Z.

The main reason for moving the origin is so the prop rotates on a different point. When you adjust the originX, originY, or originZ dial, the origin moves with respect to its original location.



Adjusting the prop origin.

As you move the origin in the respective dimensions, you may want to switch camera views to see the relative positions of the origin cross-hairs and prop geometry.

Prop Properties

Poser offers several options for props. You can change the name, make it invisible, and display the origin or set the prop's parent.

To change options for a prop:

1. Select the prop you want to work with.
2. Double-click the prop in the Document window or choose **Object menu> Properties**.

The Prop Properties dialog.

3. Set any of the following options in the Prop Properties dialog:
   - **Name**: rename the prop. Giving your props descriptive names makes them easier to locate in the Current Element popup and in the Animation palette.
   - **Visible**: toggle the prop visible or invisible. In an animation, you cannot make a prop visible in one frame, but hidden in another.
   - **Casts Shadow**: toggle shadow casting for a prop. Disable this checkbox if you import a room object. Otherwise, if the object casts a shadow, you won't get any infinite lighting on anything inside of it.
   - **Display Origin**: display the prop's axis. This feature is useful because the prop translates on its axis, not the ground floor axes.
   - **Set Parent**: make the prop move with another element in the scene. Refer to "Setting Prop Parents" on page 171 for details.
   - **Add Morph Target**: add a custom morph target to the part. For details, refer to "Adding Custom Morph Targets" on page 156.

Prop Color and Surface Material

You can set surface material characteristics for your props. For example, you can apply an image of marble as the texture map on a tall cylinder to create a pillar. You may also use a bump map to roughen the surface of a wig.

A prop you import may already have Texture and bump maps assigned. If possible, Poser keeps these maps attached to the prop.

Poser uses implicit (UV) mapping to apply texture and bump maps to the prop. This method requires the model to have UV coordinate data. Most 3D file formats carry this data. DXF, however, does not. If a prop does not have UV information, you can't apply texture or bump maps to it.

You can set the color of prop objects, apply texture and bump maps to them, and control highlights using the Surface Material dialog. The dialog is discussed in detail in "Applying Surface Materials" on page 244.

In the Surface Material dialog, you can also select the prop just like you would a body part and assign surface property parameters to it. Refer to "Surface Materials" on page 243 for more on applying surface materials.

Setting Prop Parents

You can attach props to body parts. When you pose a body, the attached prop maintains its contact and orientation with the parent element.

As the figure moves, so does the prop.

You can control whether attached props bend with their parent body part.You may not want to bend some props—like sunglasses, a wristwatch, or sword. Others you will want to conform to and bend with the figure—such as the elbow pads on a rollerblader.

Making a prop bend with its parent body part.

It is best to set prop parents before posing. Once you start posing the figure, it becomes much harder to get props correctly positioned and keep them where you intended them.

To attach a prop to a body element:

1. Add or import the prop you want to use. Rename it if you like.
2. If necessary, use the editing tools, deformers, or Parameter Dials to shape the prop.
3. Move the prop into position using the Translate tools or the Parameter Dials.

   To make sure the position and orientation of the prop and body part are exactly as you want them, you may want to do any of the following:

   - Use a detailed preview style like Lit Wireframe or Flat Shaded.
   - Zoom in for a closer look. Zoom in with the Posing Camera to avoid changing or animating the Main Camera.
   - Do a test rendering to check the alignment.

Move the prop to the figure before setting the parent.

4. With the prop selected, select **Object menu> Properties**, then click Set Parent in the dialog that appears.
5. In the Hierarchy list that appears, click to select the element you want to attach the prop to. For example, to attach a sword to the left hand, click Left Hand. If you want to release a prop from its parent, choose None.
6. To make the prop bend like its parent body part, enable the Inherits bend of parent checkbox.
7. Click OK to close the Hierarchy list.
8. Click OK to close the Prop Properties dialog.

Replacing a Body Part with a Prop

Poser lets you replace a body part with a prop. For example, you could import a model of a bull's head, then replace the figure's head with the bull head to create a Minotaur. Then you can move the Minotaur's head as you would move any figure's head.

Replace a body part with a prop to create custom characters, such as a Minotaur.

It's best to replace a body part before you start posing the figure, since it's harder to position a prop after you've moved the figure's body parts.

To replace a body part with a prop:

1. Add or import the prop you want to use.
2. If necessary, use the editing tools, deformers, or Parameter Dials to shape the prop.
3. Move the prop into position on the body using the Translate and Rotate tools, or the Parameter Dials.

   Make sure the prop and body's positions and orientation are exactly as you want them. In most cases, you'll want to "overlap" the prop with the part it will replace. You also may want to try some of these tips:

   - To more easily position a prop, hide the part you are replacing. To do this, double-click the part, then disable the Visible checkbox in the Element Properties dialog.
   - Use a detailed display style like Lit Wireframe or Flat Shaded.
   - Zoom in for a closer look.
   - Do a test rendering to check the alignment.
4. Select the body part you're replacing.
5. Choose **Object menu> Replace Body Part with Prop**. Poser displays a dialog with a popup of all props in the scene.
6. Choose the prop you are swapping in, then click OK. The prop takes the name of the part it replaces.

If a replaced a body part doesn't look right when you bend it, you can turn off bending for that replaced part. Double-click the part, then disable the Bend checkbox in the Element Properties dialog.

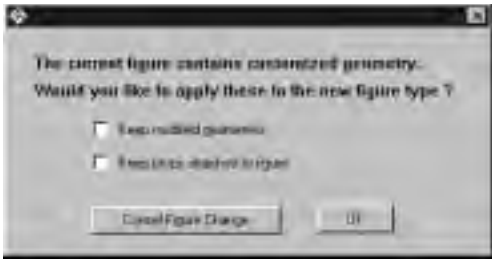
Note

Bend zones on a figure are very specific and editing them is a very technical process. Once a Bend zone is altered, the model is irreversibly changed. Use Bend zones with caution.

In terms of surface material, the prop remains independent of the body. You can use the Surface Material dialog to apply texture and bump maps to a prop. Refer to "Surface Materials" on page 243 for more on surface materials.

Changing a Figure Type with a Prop Attached or Replaced

If you try to change the model type of a figure that has an attached prop or replaced part, Poser alerts you. You can either keep the modifications on the new figure or start with a standard figure.



If you change the type of a customized figure with props, Poser alerts you.

To keep props that replace parts on the figure, enable the Keep modified geometries checkbox.

To keep props "with their parents," enable the Keep props attached to figure checkbox.

To keep props with their deformers, enable the Keep deformers attached to figure checkbox.

Restoring a Figure's Geometry

If you replace a body part with a prop, then later decide you want the original body part back, simply reload the figure from the Libraries palette. When you load the original model, Poser displays a dialog asking if you want to Keep modified geometries. To restore the original body part, leave the checkbox disabled and click OK.

Adding Props to the Library

After you've modified a prop, you can save it in the Libraries palette.

To save a prop to the library:

1. Select the Props category in the libraries palette.
2. Choose a sub-category from the popup.
3. Click the Add to Library (+) icon at the bottom of the palette. A dialog appears.
4. To specify parts of the scene to include or not include, click the Select Subset button. In the Hierarchy Selection list that appears, deselect any items in the scene that you don't want to include, then click OK.
5. In the dialog that appears, enter a name for your library item and click OK.
6. If the prop has a parent element—such as a hat attached to a head—a dialog appears asking if you want to make the prop a smart prop. A smart prop "remembers" its parent element, so the next time you select it from the Prop library, it is positioned with its parent element.
7. Click OK to save your new prop.


SWISH
THUD
ONLY THE DUOS NATURAL SKILLS AS CIRCUS PERFORMERS SAVE THEM.
GREAT SCOTT ANNA! HOW WILL WE EVER GET INSIDE THAT FORTRESS?
COME ON KARL! WE CAN'T GIVE UP NOW!
"HOLY DEATH-TRAP ANNA! BE CAREFUL!"
A FIENDISH TRAP LEADS TO A SECRET ENTRANCE AND DR. PLANE'S INNER SANCTUM.
KARL AND ANNA FINALLY MAKE IT TO THE THE GATES OF THE FORTRESS.

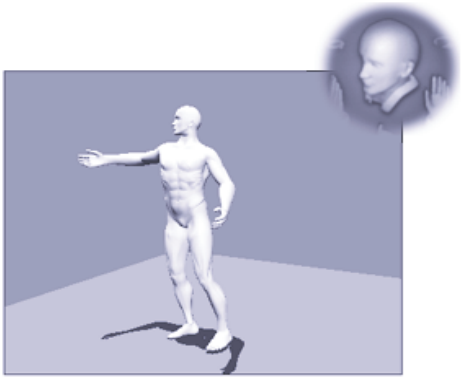
7

Cameras

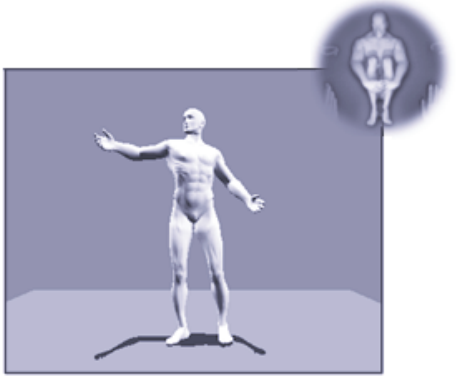
How Cameras Work

The view of the Poser studio is taken through the lens of a virtual camera. 3D cameras include Main, Auxiliary, Face, Posing, Left Hand, Right Hand, and Dolly cameras. These can be repositioned anywhere in 3D space, allowing you to view the studio from almost any angle. Orthogonal cameras, which provide perspective-free views of the studio, include Left, Right, Top, Bottom, Front and Back cameras. When you render an image or movie, it is rendered from the viewpoint of the currently selected camera.

The cameras aim at the studio from different directions. By switching cameras, you can see figures and objects in the studio from entirely different viewpoints.



View through the Main camera.



View through the Posing camera.

View through the Right Hand camera.

View through the Face camera.

Viewing the studio from different angles is a great help as you work. An arm that reaches straight toward you in a front view reaches horizontally in a side view. Posing this arm may be difficult in the front view, but is much easier in the side view.

The Main and Posing Cameras

The Main and Posing cameras rotate around the center of the studio. When the figure is in its default position, it is always in the center of the view as you rotate or re-position these cameras.

The Posing camera uses the currently selected figure as its center of rotation. Wherever the figure moves, the Posing camera follows, so the figure is always in view. If you select another figure, the Posing camera moves to the selected figure.

In contrast, the Main camera doesn't use the figure as its center of rotation. When you move the figure, the Main camera doesn't follow.

The Auxiliary Camera

The Auxiliary camera provides an additional camera view. Like the Main camera, it rotates around the center of the studio. You'll find the Auxiliary camera useful when you want another view but you want to hold the Main camera's current position, or when the Main camera is locked.

The Hand and Face Cameras

The two Hand cameras and the Face camera provide close-up views to help you with hand and face posing. Like the posing camera, these cameras rotate around the selected figure's components.

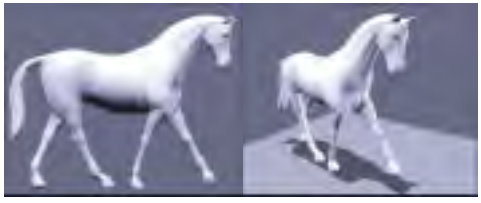
When you're working with an animal figure, the Hand cameras rotate around the animal's paws, hooves, or claws, and the Face camera rotates around the animal's face.

The Dolly Camera

The Dolly camera rotates around its own center. This means it can move around and between figures and objects in the studio. If you want to emulate a motion picture camera, use the Dolly camera.

The Orthogonal Cameras

The Left, Right, Top, Bottom, Front, and Back cameras are *orthogonal* cameras—they produce orthographic projections. In an orthographic projection, all objects appear flat. These cameras are different from the perspective views provided by the other cameras. In a perspective view, the scale of objects diminishes as their distance from the camera increases.



Left (orthogonal) camera view **Main camera (perspective) view**

The orthogonal cameras display flat perspective-free scenes; the studio cameras display scenes in 3D.

The orthogonal cameras cannot be rotated; they are permanently aligned to their orientations in the studio. You can use these cameras for reference when you're posing figures.

Flyaround View

The Flyaround view lets you see all the contents of the studio all at once. In this view the camera is placed on an imaginary track above and away from the center of the studio. When the view is active, the camera continuously moves along this track so you can get a 360° view of the figures in the studio.

To activate flyaround view:

- Click the Flyaround ring at the top of the Camera controls.

To deactivate flyaround view, click anywhere in the window.

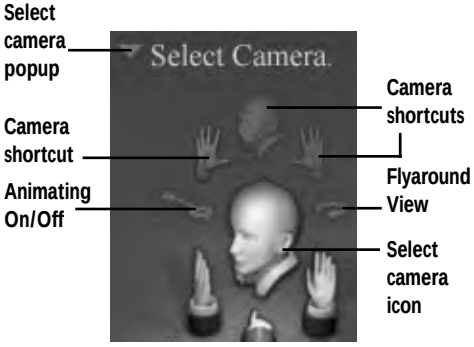
Selecting a Camera

There are several ways to select a camera:

- Use the Camera Selection control.
- Select a camera from the Current Elements popup under the Document window.
- Choose **Display menu> Camera View>** *choose a camera*.
- Use the camera's key shortcut.

The Camera Selection Control

The Camera Selection control lets you graphically cycle through all the available cameras. You can also use it to switch between cameras and activate the Flyaround view.



The Camera Selection control.

The Select Camera popup lets you select a camera by name. The Select Camera icon lets you graphically select a camera.

To switch between cameras:

- Drag over the Select Camera icon until the icon for the desired camera appears.

The Camera Selection icon.

The camera shortcut icons let you quickly access cameras. The default shortcuts are Face camera, and Left and Right Hand cameras.

You can customize the shortcuts to the cameras of your preference.

To use the camera shortcuts:

- Click the shortcut icon for the camera you want to use.

To replace the camera shortcut icons:

1. Select the camera you want to make into a shortcut.
2. Option/Alt-click on a camera shortcut icon. The icon is replaced with the currently selected camera.

The Animating On/Off icon enables or disables keyframing for a specific camera. When the control is disabled, the camera position is not included as a keyframe, which means you can't animate the view of your figures. When the control is enabled, any movement of the camera can be recorded as a keyframe. Refer to "Animating Cameras" on page 237 for more on animating the camera.

Changing the Studio View

The Main, Posing, and Dolly cameras can rotate and move anywhere, even below the floor. The orthogonal views move laterally and vertically, so you can bring a figure to the center of the field of view. You cannot Rotate or Translate In/Out (move in or out) the orthogonal cameras (left, right, top, bottom, front, and back). You can scale them, however.

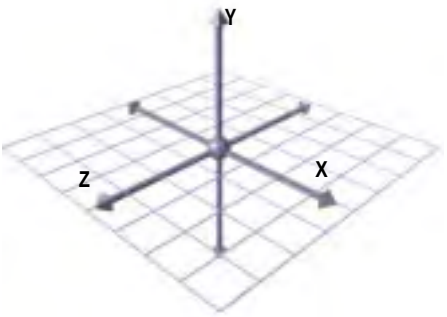
Positioning Cameras

The Camera Controls palette lets you quickly position a camera in the Poser studio. There are two sets of controls for positioning: the Camera Plane controls and the Rotation Trackball.

Camera Plane Controls

The Camera Plane Controls constrain the movement of the camera to specific 3D planes. This helps you move the camera more precisely.

3D space is made up of X, Y, and Z planes.



The X, Y, and Z planes that make up 3D space.

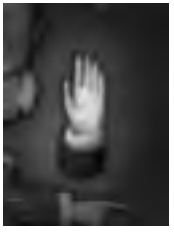
The Camera Plane controls constrain the movement of the camera along one or two of these planes.

Y and Z

The Y and Z control.

The Y and Z control constrains the movement of the camera to the Y and Z planes. With this control selected, the camera can move backward, forward, up, or down.

X and Y



The X and Y control.

The X and Y control constrains the movement of the camera to the X and Y planes. When you use this control, the camera only moves vertically or horizontally.

X and Z

The X and Z control.

The X and Z control constrains the movement of the camera to the X and Z planes. With this control the camera moves forward, backward, left, or right.

Rotation Trackball

The Rotation Trackball.

The Rotation Trackball tilts and spins the camera around the entire studio. In the case of the Main camera, it rotates around the center of the studio. The Posing, Face, and Hand cameras rotate around the figure, head, and hands.

You can roll your view around a virtual trackball by holding down Option/Alt and dragging directly in the Document window.

The Rotation Trackball has no effect on the orthogonal cameras (left, right, top, bottom, front, and back).

Scale

The Scale control.

The Scale control works like a zoom lens control. Drag right over the control to zoom into the center of the studio or left to zoom out.

Focal Length

The Focal Length control.

The Focal Length control increases or decreases the selected camera's focal length.

Drag left to decrease the focal length of the camera. Decreasing the focal length increases the sense of perspective. The effect is similar to a photographer using a fish-eye lens: vanishing lines converge more sharply and elements near the camera appear to "reach" toward you. The result can be dramatic.

Drag right to increase the focal length. This "flattens" the sense of perspective. The distance between objects appears to be shorter.

Display the vanishing lines guide to see how changing the focal length changes the perspective on the studio.

Roll

The Roll control.

The Roll control banks the camera, tilting your view of the studio. Drag right to roll the camera to the right or left to tilt the view to the left.

Using Camera Parameter Dials

When a camera is selected, you can use the Parameter Dials to precisely control the camera's position and orientation.

The Dolly, Posing, Face, and Hand cameras have the standard 3D Pitch, Yaw, and Roll capabilities. In contrast, the Main camera has xOrbit, yOrbit, and zOrbit parameters.

Focal Length

Focal Length changes the perspective of the view by adjusting the camera's lens. Drag the dial left to decrease the focal length, or increase the sense of perspective. Drag the dial right to increase the focal length, or flatten the image.

xOrbit

xOrbit tilts the camera forward or back. At a low xOrbit (-30°), the camera is near or beneath the floor, looking up at the studio center. At a high xOrbit (45°), the camera is up near the rafters, looking down at the studio center.

yOrbit

yOrbit tips the camera to the left or right. If you continue to drag, the camera orbits all the way around and returns to the starting point.

zOrbit

zOrbit orbits the camera around the studio. The camera continues to point at the center of the studio as it orbits.

Yaw

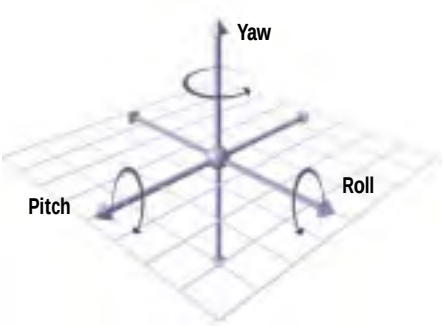
Yaw rotates the Dolly camera on its own y axis. The Dolly camera has 180° of yaw pointing away from the studio center.

Pitch

Pitch tilts the Dolly camera on its own axis. The camera stays in place, but changes the pointing angle.

Roll

Roll tips the Dolly camera to the left or right. If you continue to drag, the camera rolls all the way around and returns to the starting point.



Yaw, Pitch, and Roll.

Scale

Scale adjusts the dimensions of the studio in the window. Scaling the camera is like zooming in and out with a telephoto lens. Drag the dial to the right to zoom in. Drag the dial to the left to zoom out.

Changing the scale in only one dimension distorts the figure's appearance.

xScale

xScale changes the camera's horizontal scale to distort the appearance of the figure in the window. Drag the dial to the right to increase the xScale. Drag the dial to the left to decrease the xScale.

yScale

yScale changes the camera's vertical scale to distort the appearance of the figure in the window. Drag the dial to the right to increase the yScale. Drag the dial to the left to decrease the xScale.

zScale

zScale changes the camera's depth scale to distort the appearance of the figure in the window. Drag the dial to the right to increase the zScale. Drag the dial to the left to decrease the zScale.

DollyX

DollyX moves the camera laterally. Drag the dial to the right to move the camera to the right.

DollyY

DollyY moves the camera vertically. Drag the dial to the left to move the camera up.

DollyZ

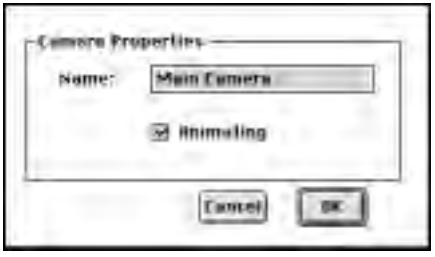
DollyZ moves the camera in and out. Drag the dial to the right to move the camera toward the studio. Drag the dial to the left to move away.

Camera Options

Poser offers two options for cameras. You can change a camera name and set whether it can be animated.

To set camera options:

1. Select the camera you want to change.
2. Choose **Object menu> Properties.** The Camera Properties dialog appears.



Set camera options in the Camera Properties dialog.

3. Enter a new name for the camera.
4. Enable the Animating checkbox to have the camera's movements recorded as keyframes. When this option is disabled, the camera's movements cannot be animated.

Note

A camera that can be animated can have different settings in several frames. If you want the camera to animate—to leave keyframes when changes are made—enable the Animating checkbox.

Pointing Cameras

You can aim cameras directly at figures, body part, or props using the Point At command. This feature makes it easy to quickly focus on an object, without having to use all the positioning controls.

To point a camera directly at an object:

1. In the Current Element popup, select the camera you want to point.
2. Choose **Object menu> Point At**. A scene selection dialog appears.
3. In the list of objects, click to select the figure, body part, or prop you want to point the camera at, then click OK.

   The camera points at the object, and a Point At Parameter Dial appears for the camera. You can adjust this parameter as needed. At 1, the camera is pointed completely at the object. At 0, the camera is not pointed at the object.

To disable the pointing of a camera:

1. In the Current Element popup, select the pointing camera.
2. Choose **Object menu> Point At**.
3. In the dialog that appears, click None.

Locking Camera Positions

Once you have positioned a camera to your liking, you can prevent it from being moved again.

To lock a camera:

- With the camera selected in the Current Element popup, choose **Object menu> Lock Actor**.

The camera is locked when the Lock Actor menu item is checked.

Saving Camera Positions

You can store a camera position in either the library for use in any Poser file or a memory dot for use with just that file.

Saving Camera Sets to the Library

The Camera category in the Libraries palette lets you save camera positions, then jump to them with just a few mouse clicks.

The default Camera category provides several positions. Add your own custom positions to expand the library. Remember: camera positions are in reference to the studio, not the figure.

The Camera category in the Poser library saves the settings of all of the cameras at once. You cannot save only one camera.

To save a camera set to the Libraries palette:

1. Set up camera positions.
2. To display the Libraries palette, click the handle on the far right side of the screen.
3. Click the Cameras category icon. If the icon is not available, move the cursor over the category dots at the top of the Libraries palette until the Cameras category appears, then click the mouse button.
4. Click the Add to Library (+) button at the bottom of the palette. The Set Name dialog appears.
5. To specify parts of the scene to include or not include, click the Select Subset button. In the Hierarchy Selection list that appears, deselect any items in the scene that you don't want to include, then click OK.
6. Enter a new name for the camera setting and click OK.
7. A dialog appears asking if you want to save a Single frame or a multi-frame animation.
   - If you select the Single frame option, the current camera position is saved.
   - If you select the Multi-frame animation option, you can specify a range of frames to save.

   Choose either Single frame or Multi-frame animation and click OK.

Your camera settings are saved to the Cameras category.

Using the Camera Memory Dots

Memory Dots are the quickest way to store the camera's position during a session. You can save up to nine different positions. Memory dots are saved with the file, so your camera positions are available the next time you open the file.

To save a camera position to a memory dot:

1. Set up a camera position.
2. Click the popup menu above the memory dots and choose Camera Dots.
3. Click an empty memory dot. The camera position is stored into the dot you clicked.

To recall a stored position:

- Click on a memory dot. The camera moves to the stored position.

8

Lights

How Lights Work

Lights add color to a figure, reveal curvatures of the form, and enhance muscle contours. Lights cast shadows, adding realism to your scenes. Good lighting is essential to getting the right look when you render. Lights can illuminate your figure in renderings, in Lit Wireframe, and in Flat Shaded previews. You can use as many lights in the Poser 4 studio as you need. The only limit is your system's memory.

Lights also aid in the creation of effects. For example, when a reflection map is applied to figures, body parts, or props to cause them to direct light back at a light source, the Multiply through lights option in the Surface Materials dialog multiplies light colors in the rendering. Refer to "Applying Reflection Maps" on page 253 for details on using reflection maps.

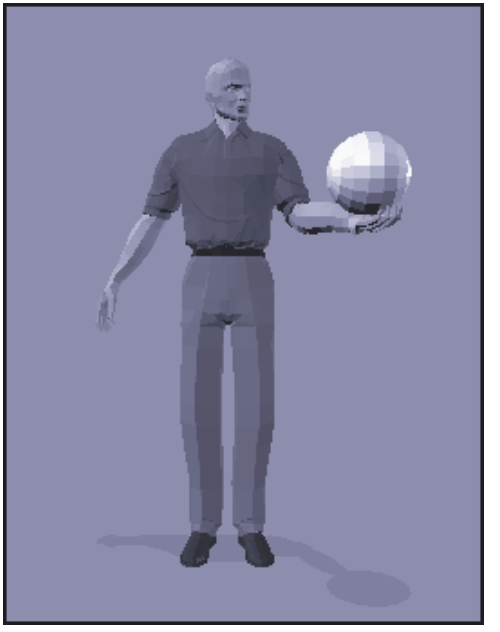
Each light has characteristics you can set, such as rotation, color, and intensity. In most cases, the direction of the light will help you decide its color. You can turn a light On or Off, adjust how brightness diminishes toward the edge of a light's range, and decide whether or not to cast a shadow.

You can animate lighting for dramatic effect, such as a flash from a bolt of lightning or the flickering lights of a street sign. You can also link lights to specific body parts or objects, so that a light source moves as the part or object moves.

Lighting effects are not visible in basic Wireframe or the low detail figure preview styles. When aiming a light, use Lit Wireframe or Flat Shaded preview styles. These styles demonstrate how the lights you use illuminate the figure.

Infinite Lights

The quality of infinite lights (sometimes called distant or global lights) in the studio is comparable to the sun or moon shining on the Earth. The light rays from an infinite source are parallel as they enter your Poser studio. If you have multiple figures, infinite lights shine equally on each figure. No figure can be outside of an infinite light's range. When you use infinite lights, no figure can be lit differently from another.



The effect of infinite lights in Flat Shaded preview.

Spotlights

A Spotlight casts light in a specific direction. They throw light along a cone-shaped path, creating the classic "stage spot" effect. Use a Spotlight when you want to point a light at something. You can add one or several Spotlights to create effects with directional light sources.

Using a Spotlight.

Note

Adding spotlights can increase the amount of time required during rendering.

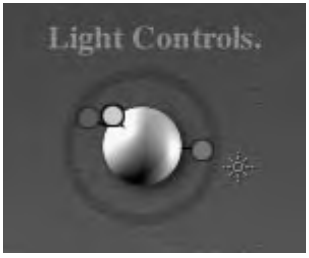
Light Properties

Light properties help you fine-tune your lighting effects. You can:

- name a light for easy referencing
- turn a light On or Off, or set the visual representation of the light's source to visible or non-visible
- control whether a light is animated
- cause a light to cast or not cast shadows
- select the light type (infinite or spotlight)
- choose a lighting color
- set a parent for a light

To set light properties:

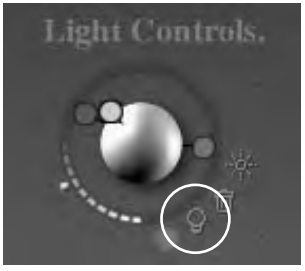
1 Click a circle in the Light Control to select that light. The Light Control is located by default in the top left corner of the Poser Workspace.



Click a circle in the Light Control to select that light.

You can also select a light from the Element popup at the bottom of the Document window.

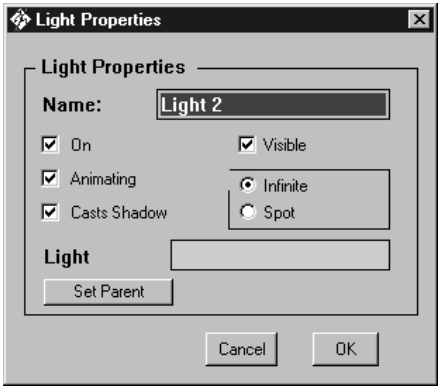
2 Click the Light Properties bulb, just outside the outer ring of the Light Control in the top left corner of the Poser Workspace.



The Light Properties bulb brings up Light Properties for a selected light.

Once a light is selected, you can also choose **Object menu> Properties** to edit light properties.

The Light Properties dialog is displayed.

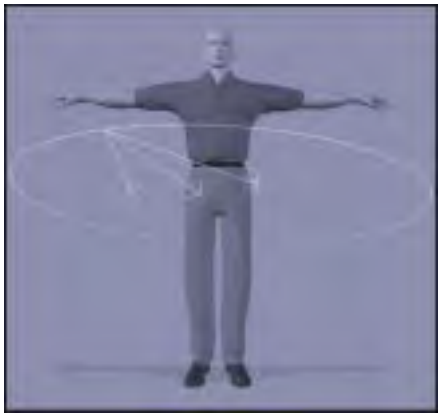


The Light Properties dialog is where you set options to fine-tune lighting effects.

Light Property options are:

- **Name** - Enter a name for the light to be used in the Current Element list. You can enter a descriptive name, such as Morning Sun or Overhead Spotlight.
- **On** - Toggles a light On or Off. You can also turn a light On or Off by Option/Alt-clicking a Light Control.
- **Animating** - Controls whether the light adds keyframes to the Animation palette. An animated light can have different settings in several frames. When this option is Off, the light does not create keyframes.
- **Casts Shadow** - Toggles between casting and not casting a shadow. When this option is On, the light casts a shadow.
- **Visible** - Makes the light indicator visible or not visible. The light indicator is a visual representation of the light's source.

The light indicator does not show when rendering. Making the light indicator not visible can reduce clutter in your Poser studio. When this option is On, the light indicator is visible.



When Visible is set to On, the light indicator—a representation of a light's source is displayed.

- **Infinite/Spot** - Determines the type of light source.

  Infinite lights shine into the studio in the same way the sun shines onto the Earth. The light rays from an infinite light source are parallel as they enter your Poser studio.

  Spotlights cast light in a specific direction. They throw light along a cone-shaped path, creating a classic "stage spot" effect. A Spotlight is like a theater Spotlight which can be moved or rotated to highlight different elements in the studio.
- **Light Color** - Determines the light's color. To set the color, click in the Color box, then select a color in the color picker dialog. You can switch between various color pickers, by selecting them from the picker list at the left of the

dialog. Refer to "Setting a Light's Color" on page 199 for more about setting light color.

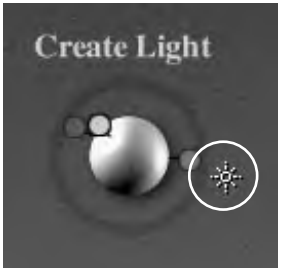
- **Set Parent** - Lets you set an element as a light's parent. For example, if you set a figure's head as the parent, the light follows the movements of the head.

Adding Lights

You can add or delete lights in your Poser studio. By default, there are three Infinite lights available when you start a Poser project.

To add a spotlight:

1. Click the Add Light star, just outside the outer ring of the Light Control in the top left corner of the Poser Workspace.

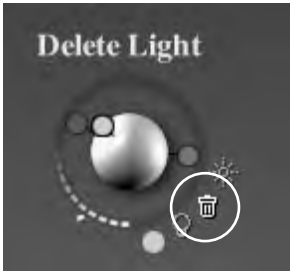


The Add Light star adds a light to your scene.

Poser adds a spotlight to your scene.

To delete a Spotlight:

1. Select the spotlight to be deleted.
2. Click the Light Trash Can, just outside the outer ring of the Light Control in the top left corner of the Poser Workspace.



Use the Light Control trash can to delete a light.

To add an Infinite light:

1. Click the Add Light star, just outside the outer ring of the Light Control in the top left corner of the Poser Workspace.

   Poser adds a spotlight to your scene.
2. Click the Light Properties bulb to open the Light Properties dialog.
3. Select Infinite, then click OK.

To delete an Infinite light:

1. Select the light to be deleted.
2. Click the Light Trash Can, just outside the outer ring of the Light Control in the top left corner of the Poser Workspace.

Aiming Lights

Finish posing your figure before aiming lights. Otherwise, if you set the lights, then re-pose the figure, its appearance under the lights changes. For example, by rotating the figure

180°, the illumination that was shining on the figure's front now shines on the figure's back. What had been well lit may now be shaded, and you must set the lights again to compensate for moving the figure.

Traditional artists often place a bright light above the figure and to the left (from the artist's point of view). Strong single-source lighting allows shading to develop on oblique and distant surfaces. This shading contributes significantly to the figure's depth and curvature.

Note

If you create a figure to match a background image, remember to position and color the lights to match the lighting in the studio background.

There are several methods for aiming lights:

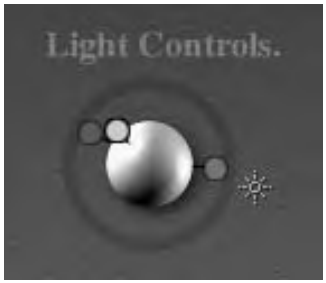
- Aim lights in Poser by hand, using the Light Control
- Move a light's light indicator in the Document window to position it
- Fine-tune light positioning with the parameter dials
- Use the **Figure menu> Point At** command

Infinite lights in Poser's studio always shine into the studio. When you aim an infinite light, you're actually setting the angle *from which* the light shines.

Spotlights provide a direct lighting source. When you aim a spotlight, you're setting not only the angle from which the light shines, but also the point from which the light originates.

Using the Light Control

The Light Control, located by default at the top-left of the Workspace, represents the current position and color of the lights in the studio.



The Light Control. Drag the circles to reposition lights.

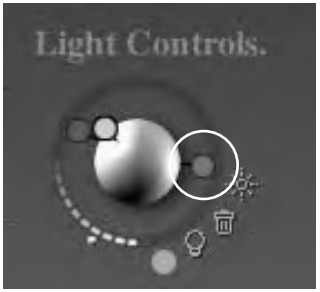
The globe in the center of the Light Control represents your Poser figure in three dimensional space. The circles surrounding the large graphic in the center represent light sources. By dragging these light sources to different positions around the center globe, you can adjust the lighting angle on your object.

The Light Control automatically updates as you drag to show a preview of the new position. The Document window also updates as you drag to show the effect of the newly positioned light.

To reposition a light using the Light Control:

1 Click a circle in the Light Control to select that light. The Light Control is

located by default in the top left corner of the Poser Workspace.



Click a circle in the Light Control to select that light.

You can also select a light from the Element popup at the bottom of the Document window, or click on a Spotlight to select it.

Note

When you click anywhere inside the Light Control, the nearest light circle is automatically selected.

2 Drag the light circle in the direction you want the light to move.

Using Light Indicators

When you select a light, Poser displays a light indicator that describes the light's position in the Document window. In some cases, it helps to view the indicator from a different perspective. Switch the camera view or zoom out to get a different view of the indicator.

Using an Infinite Light's Light Indicator

The infinite light indicator appears as a ring around the figure. To understand the infinite light indicator, visualize it as the equatorial stripe of a transparent globe. The light aims toward the center of the globe from a point on the equator, shown by the arrows.

The light indicator describes the currently selected light.

When viewed from an oblique angle, the stripe appears as an ellipse, with the near side lit and the far side darkened. This helps show whether the light is in front of the figure or behind it.

The light is not actually on the edge of the indicator line. If it were, you could move the figure to one side and out of the circle of light. *The indicator merely represents a larger globe* that encompasses the entire studio.

To move an infinite light with the light indicator:

- Drag anywhere in the Document window and continue dragging beyond it, all the way to the edge of the screen.

Using a Spotlight's Light Indicator

The Spotlight indicator appears as the outline of a Spotlight. It is depicted as a free-standing Spotlight, aimed in a specific direction inside the studio.

A Spotlight's light indicator appears as the outline of a Spotlight.

To move a Spotlight with the light indicator:

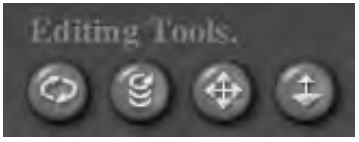
- Drag anywhere in the Document window.

Adjusting Light Indicators with Tools

The Editing Tools can be used to adjust the position of the indicator in the Document window. Only the Rotate and Twist tools have any effect on infinite lights. These tools rotate and twist the indicator around the center of the studio.

The Rotate and Twist tools can be used to adjust the position of an infinite light's light indicator.

The Rotate, Twist, Translate/Pull, and Translate In/Out tools can be used to adjust Spotlights.



The Rotate, Twist, Translate/Pull, and Translate In/Out tools can be used to adjust the position of a Spotlight's light indicator.

Scaling a Light Indicator

You can change the size of a light indicator with the Scale Parameter Dial. Scaling the light indicators does not change lighting in the scene—it only changes the size of the indicator.

Aiming with Parameter Dials

The Parameter Dials allow you to rotate or move a light in a specific plane or to a numerically defined position.

Before using the Parameter Dials, select the light you wish to adjust. You can either click one of the Light Control, select the light from the Current Element popup, click its listing in the Animation palette, or click directly on a Spotlight's light indicator.

Rotating a Light

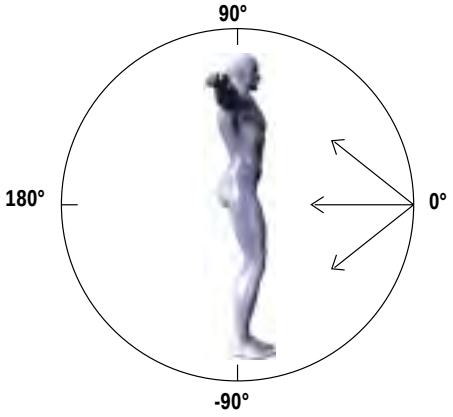
The xRotate, yRotate, and zRotate dials orbit the light around the X, Y, and Z axes, respectively.

The xRotate, yRotate, and zRotate Parameter Dials let you rotate lights with numeric precision.

When xRotate and yRotate are set to 0°, the light aims directly at the front of the figure. zRotate is significant only when xRotate, yRotate is not 0°, 0° or 180°, 180°.

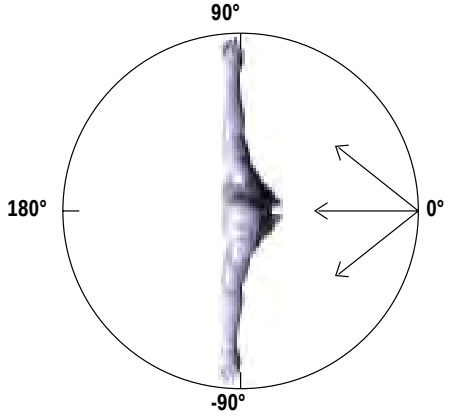
The following diagrams of an infinite light's light indicator should help you visualize the effect of each dial. In each case, the figure is in the default position.

xRotate



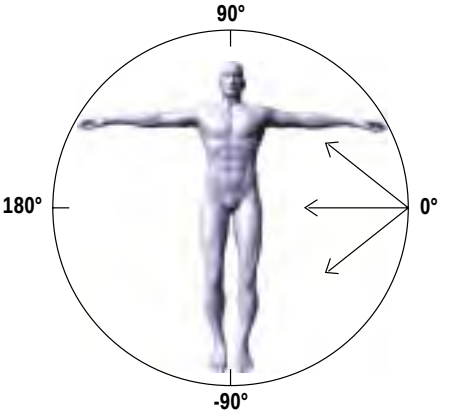
xRotate, side view.

yRotate



yRotate, top view.

zRotate



zRotate, front view.

To rotate a light numerically:

1. Click beside the numeric value on the right side of the parameter dial for the axis you want to rotate the light around.
2. Enter a value between zero and ±180.
3. Click outside the entry area.

   You can also double-click on a parameter dial to open a dialog, where you can enter a numeric value for the dial. In addition to a numeric value, this dialog shows the dial name, as well as minimum and maximum limits for the selected dial.

Repositioning a Spotlight

The xTran, yTran, and zTran dials move a Spotlight along the X, Y, and Z axes, respectively.

The xTran, yTran, and zTran Parameter Dials let you move Spotlights with numeric precision.

To move a spotlight numerically:

1. Click beside the numeric value on the right side of the parameter dial to select the axis upon which you want to move the Spotlight.
2. Enter a value between zero and ±180.
3. Click outside the entry area.

   You can also double-click on a parameter dial to open a dialog, where you can enter a numeric value for that dial. In addition to a numeric value, this dialog shows the dial name, as well as minimum and maximum limits for the selected dial.

Pointing a Light at an Object

You can use the Point At feature to aim a light directly at a figure, body part, or prop. For example, you can use this feature to point a spotlight at a figure's head or hand. To easily aim a spotlight, use the Point At feature on a prop, then make the prop invisible in the Prop Properties dialog.

To point a light directly at an object:

1. In the Current Element popup, select the light you want to point.
2. Choose **Object menu> Point At**. A scene selection dialog appears.
3. In the list of objects, click to select the figure, body part, or prop you want to point the light at, then click OK.

   The light points at the object, and a Point At Parameter Dial appears for the light. You can adjust this parameter as needed. At 1, the light is pointed completely at the object. At 0, the light is not pointed at the object.

To disable the pointing of a light:

1. In the Current Element popup, select the pointing light.
2. Choose **Object menu> Point At**.
3. Click the None button, then click OK.

When a pointed light is disabled, its Point At Parameter Dial still exists. You can remove this dial in the Hierarchy Editor. For details, refer to "Deleting Objects" on page 292.

Lighting Color

The color of the lights contributes to the color of the figure in renderings. The colors don't mix and add to one another, they multiply. For example, a blue figure with red lighting would not appear purple, it would be black.

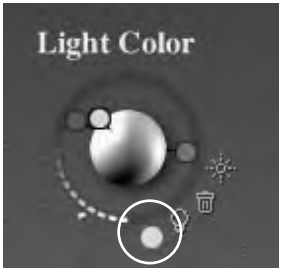
If you don't want lighting to influence figure color, simply set the lights to white or gray.

Because the lighting and the surface color determine the appearance of the rendered figure, you may want to set the figure's color before working with the color of lights. For more information on setting the color of the figure, refer to "Using the Color Tool" on page 139.

Setting a Light's Color

To set a light's color:

1. Select a light.
2. Click the Color dot that appears at the bottom of the Light Control and choose a color from the palette that appears.



Click the Color dot at the bottom of the Light Control to change the color of a selected light.

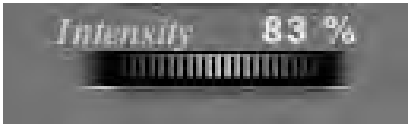
Note

Click an icon in the color picker list on the left side of the color dialog to select a color picker that suits your needs.

Light Color Parameters

The Red, Green, and Blue Parameter Dials adjust the levels of these color components.

Drag the Intensity dial to adjust the brightness. Drag the dial to the right to increase the level, or left to decrease it.

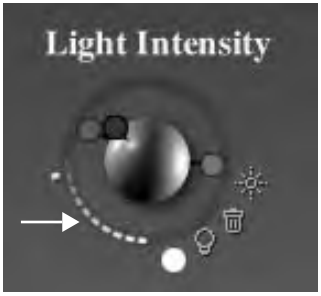


Use the Intensity dial to set color brightness.

Setting Light Intensity

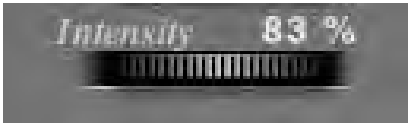
To set a light's intensity:

1. Select a light circle in the Light Control.
2. Click and drag the Intensity dot located outside the bottom left of the Light Control. Drag clockwise to reduce intensity. Drag counter-clockwise to increases it.



Drag the Intensity dot to quickly adjust light intensity.

You can also set light intensity by adjusting the Intensity Parameter Dial.



Use the light Intensity Parameter Dial to fine-tune the intensity setting.

Setting Spotlight Characteristics

Use the Angle Start/End and Distance Start/End Parameter Dials to set Spotlight falloff characteristics. Light falloff lets you control the relationship between the intensity of a Spotlight and the distance from the light source. In the real world, the farther you are from a light source, the less influence it has on the illumination of your surroundings. In other words, the greater the distance, the weaker the light.

In Poser, there are two types of falloffs you can apply to a Spotlight:

- Angle Falloff sets how the brightness of the light diminishes toward the edge of the light cone. For example, a falloff of 10% means that the light has full intensity from the center to 90% of the radius of the light cone, then decreases linearly to the edge of the cone. You can set a starting falloff angle and an ending falloff angle for every Spotlight.

100% Falloff 50% Falloff 0% Falloff

As you increase the falloff percentage, you decrease the area that is 100% bright.

- Distance Falloff determines the distance from the light itself to the point where the light has no effect. You can set the distance at which a Spotlight starts to fall off and an ending distance—after which no light extends.

To set the angle falloff for a spotlight:

1. Set the Angle Start Parameter Dial to the percentage of intensity present at the start of the cone of light projected by the Spotlight.
2. Set the Angle End Parameter Dial to the percentage of intensity present at the end of the cone of light projected by the Spotlight.

To set the distance falloff for a spotlight:

1. Set the Dist Start Parameter Dial to the distance where light starts to falloff.
2. Set the Dist End Parameter Dial to the distance past which no light extends.

Using Shadows

Poser lights cast shadows. Figures and props produce shadows on each other and on the ground plane when it is displayed. Shadows can add appeal and enhance realism. In animations, moving shadows can be highly cinematic.

To change the cast of a light's shadow, change the angle of the light. You can also control whether an individual light casts shadows in the Light's Properties dialog (**Object menu> Properties**).

Shadows are visible in renderings.

Note

Shadows are only visible after rendering.

Spotlights always render based on the angular range of the spotlight. That means tighter Spotlights produce cleaner shadows. Infinite lights in comparison, adjust the view to fill the screen with all the objects that cast shadows. Because of this, if you render a close-up of a face in a scene which has 30 people, the resulting shadow map does not contain a lot of information.

Note

Advanced users can open the animation palette and select a shadow camera attached to a light to adjustment that camera so that it zooms in on a subject.

Shadow Parameter Dials

The light Parameter Dials provide two controls for shadows.

Shadow

Shadow controls the darkness of the shadow cast by this light. You can adjust between a faint shadow and a dark, 100% shadow.

You can animate the shadow strength. Set keyframes of different shadow strength to fade shadow darkness in or out.

Map Size

Map Size sets the resolution of the shadow map for a light. Shadow maps are square, and the value sets the number of pixels in a dimension. Poser uses a map image to apply shadows to objects in the scene. It develops imagery (the shadows) in these maps during rendering.

Larger map size values increase the detail of shadow shapes, but that extra detail takes longer to render. Each map requires memory. For example, a 1024x1024 map needs around 4 MG, a 2048x2048 map requires 16 MG. Each map also adds to the amount of memory needed during rendering.

Depth cannot be animated. The setting applies to the light throughout the file.

Setting a Parent

Poser lets you attach lights to body parts or props. When you pose the body, the attached light maintains its contact and orientation with the parent part.

To attach a light to a body element:

1. Add or select a light.
2. Choose **Object menu> Set Parent** and select from the list the body part to which you want the light attached.

Saving Light Sets

If you set the lights in a way that you want to use again, save the lighting environment as a light set to the Lights category in the Poser Library, where you can easily retrieve it.

The Lights category saves the current settings for the lights, including the map size.

To save a light setup:

1. Set up your lights.
2. Display the Libraries palette by clicking the handle at the far right side of the screen.
3. Click the Lights category. If the category is not visible, move the cursor over the category dots until the Lights category appears and then click the mouse button.
4. Click the Add to Library (+) icon. The New Set Name dialog appears.
5. To specify parts of the scene to include or not include, click the Select Subset button. In the Hierarchy Selection list that appears, deselect any items in the scene that you don't want to include, then click OK.
6. Enter a name for the new light set and click OK.

   A dialog appears asking if you want to save a Single frame or a multi-frame animation.

   - If you select the Single frame option, the current lighting setup is saved.
   - If you select the Multi-frame animation option, you can specify a range of frames to save.
7. Choose either Single frame or Multi-frame animation and click OK.

   The new light set appears in the Light category.


LOOK AT THAT STRANGE WRITING. I WONDER WHAT IT MEANS?
EGHAD! WHAT DID I TOUCH.
THE SECRET PASSAGE LEAD OUR HEROIC DUO DOWN A STAIRCASE ENTERING INTO DR. PLANES LAIR.
" HE HE, THOSE FOOLS ARE WALKING RIGHT INTO MY TRAP. "

9

Animating Figures

Poser 4 lets you animate your figures, adding motion to your scenes. You can use your work in multi-media projects, on Web pages, and in video projects.

When you've developed an animation in Poser, you can save it as a movie in QuickTime, in AVI, or as sequential image files. You can open animation files in a motion-graphics application, where you can add effects and perform other post-production tasks.

You can create Poser animations of any length; however, it's easier to create relatively short animations. You can use a movie-editing program to splice animation clips together.

How Animation Works

Poser uses a technique called *keyframe animation* to simulate motion based on static figure poses. In keyframe animation, you set up poses at different points in time, called *keyframes*, and Poser fills in the gaps, creating an illusion of motion. This way you don't have to keep posing your figure each time you want to create a motion. All you have to do is set up the starting position of the action and the ending position. Poser takes care of the rest.

Poser fills in the gaps between keyframes using a process called interpolation. Interpolation determines how intermediate poses (that is, the poses in between the start and end poses), are created. There are four types of interpolation:

- Spline, which places intermediate poses (and settings) on a curve.
- Linear, which places intermediate poses at equal increments so the motion is smooth and straight.
- Break Spline, which has no intermediate poses. Position changes abruptly only at the keyframes.
- Constant interpolation, which maintains a keyframe position, then instantly changes to the next pose.

Refer to "Keyframe Interpolation" on page 224 for more on interpolation.

Animation Tools

There are two animation tools in Poser: the Animation Controls and the Animation palette. The Animation Controls let you quickly set up and preview animations using a simple click and drag interface. Refer to "Creating Animations" on page 209 for more on the Animation Controls.

The Animation palette lets you edit keyframe positions and create more complex animations. It also lets you animate individual body parts and edit the keyframes within your animation. Refer to "Editing Animations" on page 213 for more on the Animation palette.

What You Can Animate

You can make any series of changing images into an animation. The "change" can be of any description. Virtually any type of change you can make in Poser can be animated.

Regardless of what you animate, you go about it in the same way—by setting keyframes at the start and end of each action (change).

Animating Figures

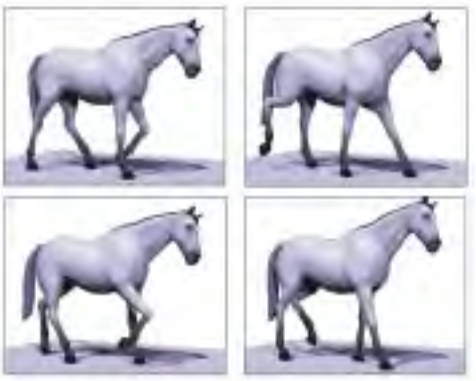
Figures can change positions and move about the studio. They walk, dance, climb, fight, tumble, fly, and fall to earth.

Often, you create the illusion of movement by changing the pose of a figure. However, you can also create animation using the Scale tool.

When animating figures, keep these points in mind:

- You can set Inverse Kinematics (IK) for the legs and arms of any figure. IK is a global setting; there can only be one IK setting per animation. You cannot set IK on in one keyframe and off in the next.
- Turning IK on or off can affect interpolated motion. For this reason, whenever you change the status of IK for any limb, Poser 4 creates keyframes that secure the motion approximately "as is."
- Inverse Kinematics determines the pose of some body parts based on the pose of another part. For example, the knee may be bent but the shin won't have a keyframe. The foot or hip, one of which *is* keyframed, determines how and when the shin bends.

  For more information on IK refer to "Inverse Kinematics" on page 111.



Example of an animated figure.

Animating Hands

You can create animated hands just as you would animate any other body part. By creating a starting and ending position for the fingers on a hand you can create almost any type of hand motion.

Example of animating a hand.

Animating Faces

Like hands, the faces on Poser's People figures are fully articulated, meaning that you can animate facial expressions. Facial animations can be extremely powerful. With a moving face, you can simulate a wide range of emotions and even speech.

The Poser libraries provide a series of phoneme presets to help you simulate speech motions. The phoneme presets do not provide all the facial positions you need to create fully realistic speech, but you can use them as a starting point. For more information on simulating speech, refer to "Faces and Phonemes" on page 132

Example of animating a face.

Animating Props

Props can move, rotate, and change size. A ball can bounce. An axe can swing. A chair can be overturned. Use the Set Parent feature to attach props to the figure. This keeps props moving with the figure through any pose.

For more information on setting prop parents refer to "Setting Prop Parents" on page 171.

Example of animating a prop.

Animating Deformers

Magnet Deformers

The Magnet deformer distorts an object by creating a virtual magnet which stretches it. Magnet behavior, the Magnet Base, and the Magnet Zone can all be changed. You can also rotate, twist, translate, and scale a Magnet deformer and capture the effects in an animation.

For more information on using Magnet Deformers, refer to "The Magnet Deformer" on page 144.

Example of animating the effect of a Magnet Deformer on an object.

Wave Deformers

A Wave deformer distorts an object by creating a wave path for it. Waves can rotate, move, and change size. You can switch between wave types. The Wave zone can be changed. You can change Wave amplitude, Wavelength, and Stretch settings. Noise parameters can be adjusted, Turbulence added, or an Offset can be set. Easy examples of animating a Wave Deformer are causing a flag to wave or creating the effect of moving water.

For more information on creating Waves, refer to "The Wave Deformer" on page 149.

Example of animating a the effects of a Wave.

Morph Targets

A morph target is a custom Parameter for a body part that enables you to gradually reshape it. You can create morph targets for figure elements, full body morphs, or morphs that work on grouped parts. Reshaping an object using a morph target can be animated.

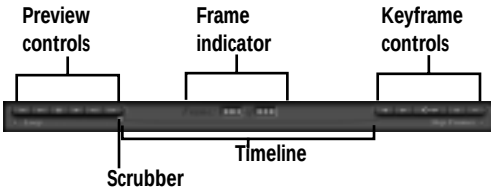
For more information on creating Morph Targets, refer to "Creating Custom Morph Targets" on page 154.

Example of animating the effect of using a Morph Target.

Creating Animations

The Animation Controls, located at the bottom of the screen, are the tools you use most to create animations. They contain controls for adding keyframes, editing keyframes, and previewing animations.

The main area of the Animation Controls displays the Timeline. The Timeline represents time in Poser. The Scrubber on the Timeline represents the current time. By positioning the Scrubber at different points in time you can move through time setting up keyframes. The counter in the center of the controls shows you which frame you're currently viewing in the Document window.



The Animation Control's Time Display Area controls the creation and playing of animations.

The controls on the left side of the Animation Controls let you preview all the frames on the Timeline. You can play all the frames or step through all the frames one at a time.

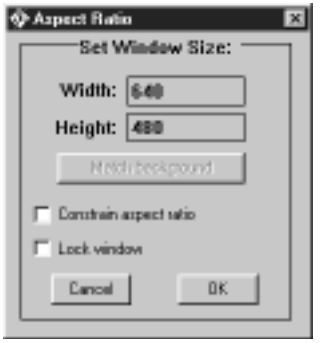
The controls on the right side of the Animation Controls let you edit the keyframes on the Timeline. You can add, delete, and preview keyframes.

Setting Up Your Animation

When you begin an animation, you set the dimensions and duration of your project.

To set up an animation:

1 Choose **Window menu> Document Window Size**. Set the dimensions of the Document window according to the aspect ratio of the frame size you want.



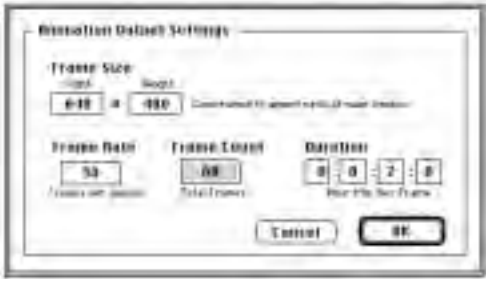
The Document window Aspect Ratio dialog.

The Document window need not equal the frame size for your intended animation output, but it must be consistent with the aspect ratio.

Any aspect ratio is acceptable. For an extremely wide animation, you could use an aspect ratio of 3:1 and create a window that's 600 x 200.

If you are working with an imported background—either still or moving—you can import that file now. Poser asks if you want to set the dimensions of the Document window to match the imported background.

2 Choose **Animation menu> Animation Setup**. Poser displays the Animation Setup dialog.



The Animation Output Settings dialog.

3 In the Frame Size field, enter either the width or height value for the animation output you want. The aspect ratio of the Document window determines the other value.

4 Set a Frame Rate. Frame Rate determines how many frames are displayed each second.

NTSC video plays at 30 frames per second (fps). Film plays at 24 fps. Many computer animations work quite well at 12 to 15 fps. Animations for display on the World Wide Web can be successful with as few as 8 frames per second.

5 Set either the Frame Count or the Duration. These values are interdependent. Set one, and Poser fills in the other.

- Frame Count is the total number of frames in the animation.
- Duration describes how long the animation lasts. The display uses the SMPTE standard—hours: minutes: seconds: frames.

Working with the Animation Background

By default, your animation moves over the background set for the Document window. You may want to animate over a changing background. For example, in some animations, walking characters stay in the center of the screen. The background scrolls, which gives the impression that they are actually moving.

You can import a QuickTime or AVI file as the background. Each frame of the imported movie appears sequentially as the background in frames of the animation.

When you make a movie, Poser composites the figures with the background imagery by default. This is an easy way to get your animated Poser figure in a moving scene.

Tip

You can use background footage as a guide for animating. For example, import a video clip of a gymnast and pose a figure to match the actions of the gymnast.

To import background footage:

1. Prepare a QuickTime or AVI movie as the background.
2. Open your Poser animation file.
3. Choose **File menu> Import> QuickTime Footage or AVI Footage.**
4. Use the **Display menu> Show/Hide Background Footage** and **Clear Background Footage** to control background display.

Working with the Timeline

The Timeline that appears at the bottom of the screen is a graphic representation of time. The Scrubber on the Timeline represents the current time as displayed in the Document window.

The Timeline.

Setting the Current Time for an Animation

The Scrubber is the tool you use most when creating animations. The Indicator controls when a keyframe occurs in time. When creating keyframes, you move the indicator to define when the event occurs.

As you move the Indicator, the Frame number changes to show the number of the current frame. To move to a specific frame, either move the Frame Indicator or enter a number in the Frame number field.

The Scrubber controls when keyframes occur in animations.

The Scrubber also controls which portion of your animation is displayed in the Document window. When the Indicator is at the beginning of the Timeline, the first frame of your animation shows. As you move the indicator, you see how your pose changes over the course of your animation.

To move the current time manually:

- Drag the Scrubber along the Timeline. As you drag, note that the Time Display area shows the current frame number in your animation.

  Release the mouse button when you reach the desired frame.

To move the current time numerically:

1. Click the frame number in the Time Display area. A text field appears.
2. Enter the number of the frame you want to move to and press Return/Enter. The Scrubber jumps to the specified frame.

Recording Keyframes

When camera animating is On, Poser records changes you make to your Poser figures as animation keyframes. You create keyframes by moving the scrubber to a new point on the timeline, then making a change to a Poser figure, object, prop, light, or camera.

A recorded keyframe stores changes in the position of each body part in the figure. It also stores changes in scale, color, lighting, or camera position. Since you can store one set of positions and parameter settings at any given point on the timeline, Poser saves the last changes you make, until the scrubber is moved to a new point in time. For example, if you move an arm up and then down while the scrubber remains at the same location in the timeline, the down motion is recorded for that keyframe. To make an arm move up and then down, record the up motion in one keyframe, then move to a different keyframe to record the down motion.

To record keyframes:

1. If necessary, click the Animating On/Off Key icon in the Camera controls to turn the Poser animation system On for the current camera.

Click the Animation System Key by the Camera control to toggle the system between On and Off.

   Camera Animating is On by default. When Off, the Animating On/Off Key is red.

2. Move the Scrubber to a position in time.
3. Use the Editing Tools to adjust the pose of your figure or make an adjustment to a camera or light. A new keyframe is created.
4. Move the Scrubber to a different point on the timeline and change something else.
5. Continue creating keyframes until your motion sequence is complete.

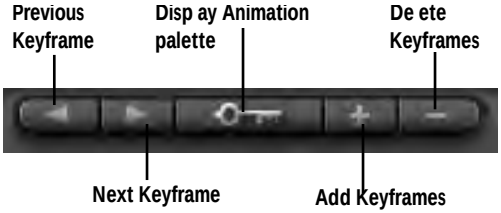
Adding and Deleting Keyframes

In most cases, the Animation System is used to automatically record keyframes for your animation. Sometimes, you'll want to instruct the Animation system to explicitly create a keyframe, like when Animating for the current camera is set to Off and no keyframes are being recorded.

For example, you set the Scrubber to a point in the timeline, then make a number of changes—not realizing that Animating for the current camera is set to Off. Because the system is turned Off, you must manually create a keyframe to store the results of your changes. If you don't create a keyframe, when you move the scrubber to a new point on the timeline the changes you've just made are discarded.

You might also want to add a keyframe to fine-tune movements recorded by the Animation System. For example, at frame number 10, the figure's left foot is flat on the ground. You move the scrubber to frame 20, then make a change to the position of the left foot. The Animation System records that change, then calculates positions for the left foot for all those "in-between" frames. To further refine the "in-between" frames, you could move the Scrubber to frame 15, reposition the left foot in an intermediate pose, then explicitly add a keyframe to store that change.

The Animation Controls let you quickly add and delete keyframes. When you delete a keyframe, all the stored properties for the figures are deleted. When you add a keyframe, the figure's current position in the Document window is saved as a keyframe.



The Keyframe controls allow you to add and delete keyframes.

To add a keyframe:

1. Move the Scrubber to the desired point in time.
2. Click the Add Keyframes (+) button.

To delete keyframes:

1. Click either the Previous Keyframe or Next Keyframe button until the keyframe you want to delete is displayed in the Document window.
2. Click the Delete Keyframes (-) button.

Editing Animations

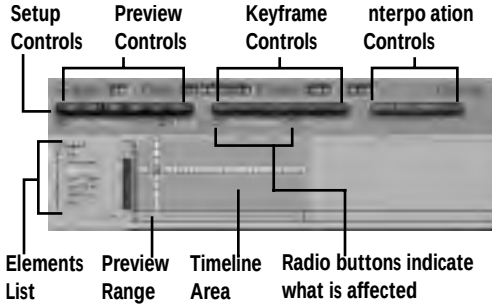
The Animation palette is where you edit the keyframes in your animation. The palette shows the layout of the keyframes and provides for setting and navigating between them. The palette also provides controls for playing animations.

To display the Animation palette:

- Choose **Window menu> Animation Controls**.

  or

  Click the Display Animation Palette button on the right side of the Animation Controls.



The Animation palette allows you to edit keyframes.

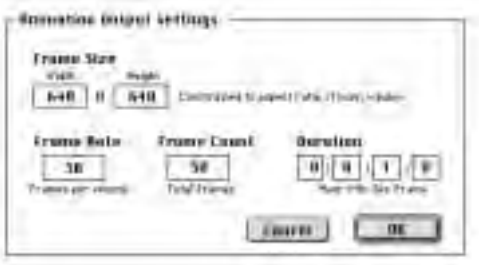
When you first display the palette, it shows all the keyframes you've previously created using the Animation Controls.

The Animation palette is divided into the following sections:

- The Setup controls are used to set Frame Rate, Duration, Frames, and display options for the Timeline Area. These controls also let you preview your animation and navigate through the keyframes.
- The Elements List displays all the objects in the studio. Figure-type elements contain a listing for each of the parts that make up that figure.
- The Timeline Area, displays all the keyframes stored for each of the body parts. Keyframes are displayed as red squares in the grid and interpolated frames are shown in different colors to identify the interpolation type. An *interpolated* frame is an animation frame created by Poser to fill in the gaps between keyframes.

Editing Animation Setup

You can use the Animation palette's Setup controls to edit your animation setup parameters. Many of the controls in this palette can also be accessed from the Animation Setup dialog (**Animation menu> Animation Setup**).



The Animation Palette's setup controls.

Changing the Frame Rate

Frame Rate determines how many frames are used during each second of action. Thus, frame rate is measured in Frames Per Second (fps). Higher frame rates have more frames in a second, producing smoother motion, but require more time to render.

To edit the frame rate:

1. Click the FrameRate indicator at the top of the Animation palette. A text field appears.
2. Enter a frame rate.

You can also click the arrow icon next to the Frame Rate indicator and pick a frame rate from the menu

Moving the Current Time

The Current Time display lets you keep track of the current time shown in the Timeline area, and lets you change the current time.

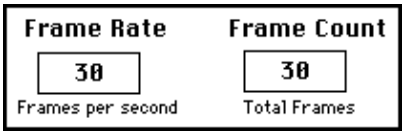
As you edit keyframes in the Timeline Area, the display changes to show you the current time in SMPTE format (Hours: Minutes: Seconds: Frame). You can also enter a time to display a specific point in time.

To move to a specific time:

1. Click one of the Current Time display fields. A text field appears.
2. Enter the hour, minute, second, or frame you want to see.

Changing the Number of Frames

The two Frame indicators show you the number of the currently selected frame and the total number of frames in the animation. You can move to a specific frame by selecting the Frame field and entering a frame number.



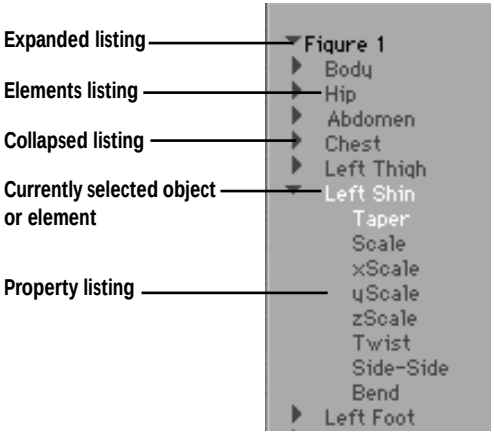
The Frame indicators.

To change the total number of frames in your animation, click in the Total Frames field and enter a new value. When you change the total number of frames you set the maximum number of frames in your animation. If you have more frames in the animation than the Total Frames value, frames are deleted.

Viewing the Elements List

The Elements List displays all the figures, lights, cameras, and props currently in the studio. The listing for a figure can be expanded to display all the objects that make up that figure. Each object within a figure can be further expanded to display all the properties of that object. For example, you can view the Scale or Translation keyframes.

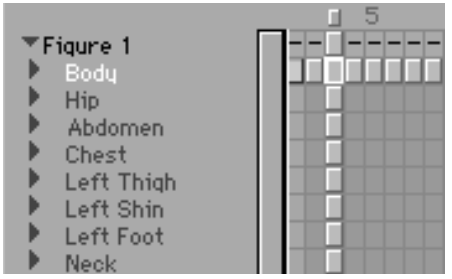
Using this listing, you can select an object or studio element you want to animate.



Elements List in the Animation palette.

Selecting Elements

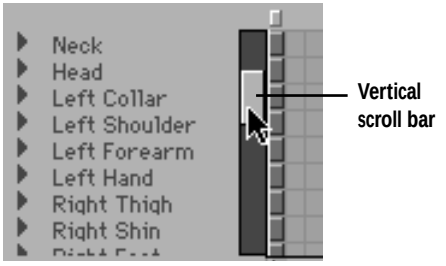
You can select an element by clicking on it in the Elements List. Selecting an object here is equivalent to clicking on it in the Document window or choosing it from the Current Element popup at the bottom of the Document window. Poser highlights the name and grid row of the selected object.



The hip is the selected element.

To scroll down the list of elements:

- Drag the vertical scroll bar.



Scrolling through the Animation palette to display additional elements.

Collapsing the Elements List

Each figure has many parts, and each part has many properties. This can make for a very long Elements List. You can collapse any of the figure listings to save space, or expand them to show more detail. When you are not working with a particular figure, you can collapse its listing. This shortens the Elements List and makes other objects easier to locate.

Note

When you collapse a Figure in the Elements List, the keyframe line displayed controls the figure's position in the studio. Posing changes only show when the listing is expanded.

To collapse/expand a listing:

1. Click the triangle next to the figure name.

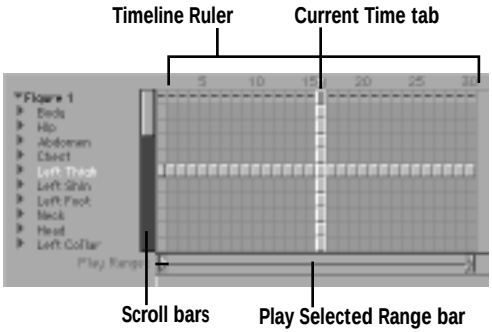
   A down-facing arrow indicates that a listing is expanded. A right-facing arrow indicates a collapsed listing.

2. Click the triangle again to collapse the list.

You can collapse or expand the elements listing in the Animation palette.

Editing Keyframes on the Timeline

You can use the Timeline area to select keyframes, edit their position, or delete them from the animation. You can also add new frames for specific properties or objects.



Timeline Area on the Animation palette.

The Timeline area displays time as a grid. The grid displays the keyframes for each of the items in the Elements List.

Time is displayed as columns. Each column can represent either a specific point in time or a frame in the animation. The Ruler at the top of the area indicates whether the columns represent points in time or frames.

Each object or property in the Elements List is represented on a row in the Timeline area.

Keyframes appear as red squares. Interpolated frames between frames appear in different colors depending on the type of interpolation used to create them. Green denotes Spline interpolation, and red denotes Linear interpolation.

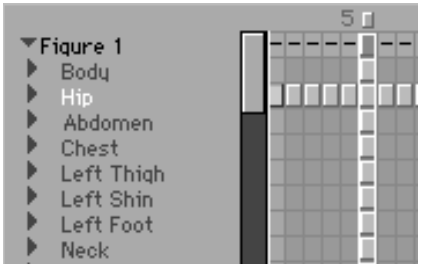
To change the Timeline Ruler display:

- Click the Options label at the top of the palette, and choose Display Frames or Display Time Code from the menu.

Selecting Keyframes

Poser starts with the first frame selected (frame #1). You can select any frame by clicking in, or above, its column. You can also enter a number in the Frame field at the top of the palette. Poser displays the number of the frame and highlights the column.

When you select a keyframe, the item's row and the time column is highlighted, creating an intersection. Selecting another keyframe moves the intersection to a different point.



The hip is the selected object. Frame #6 is the current frame.

The Frame scroll bar appears when there are more frames than the window can display.

To select a keyframe:

- Click one of the dark red squares on the grid.

To scroll across frames:

- Drag the horizontal scroll bar. The scroll bar only appears when the number of frames exceeds what the window can display.

Adding Keyframes

You can add keyframes to store a specific pose or save an interpolation frame created by Poser.

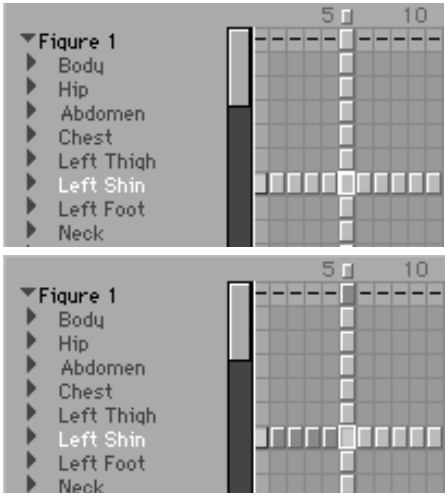
Keyframes can be added for a specific object or property using the This Element option. When enabled, any keyframe you create is only applied to the selected element.

You can also use the All Elements option to add frames to store all changes for all the elements in the animation at a specific point in time. This creates a kind of checkpoint. Once all element properties are saved into keyframes, you can experiment with poses in the remaining part of the animation while leaving the first half of your animation unchanged.

To add a key for one element:

1. Select the frame where you want to add the new keyframe.
2. Click the This Element radio button.
3. Select the object you want to set.
4. Click the Add Keyframes (+) button.

To add a keyframe for a selected element, click the Add Keyframes button for This Element.

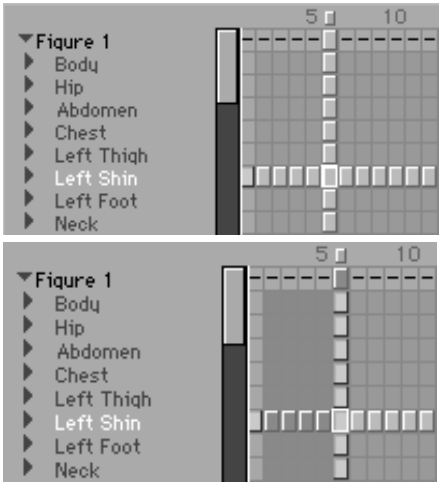


Add a keyframe for this element.

To add a key for all elements:

1. Select the frame where you want to add the key.
2. Click the radio button for All Elements.
3. Click the Add Keyframes (+) button.

To add a keyframe for the entire figure, click the Add Keyframes button for All Elements.



Add a keyframe for all elements. Notice the color changes in keyframe #8.

Clearing Keyframes

At some point, you may decide to remove a keyframe. Once a keyframe is removed, the animation changes.

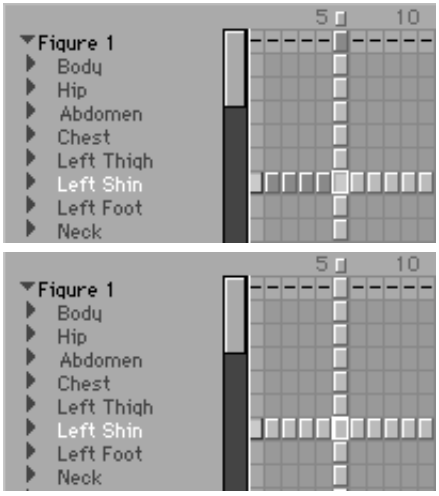
You can clear a keyframe for a single object/element or for all objects/figures in the scene.

Clearing does not delete the frame. It removes the settings that make this frame a keyframe. The frame is still in the animation, but it does not have a key assigned to it. Once the keyframe is removed, the values at that frame are recomputed to properly blend with neighboring keyframes.

To clear a keyframe for one element:

1. Move the Current Time tab to the point in time where you want to clear the keyframe.
2. In the Elements List, select the figure part whose keyframe you want to clear.
3. Enable the This Element radio button.
4. Click the Delete Keyframes (-) button. You can also press the Delete/Backspace key.

To clear a keyframe for one element/object, click the Delete Keyframes button for This Element.



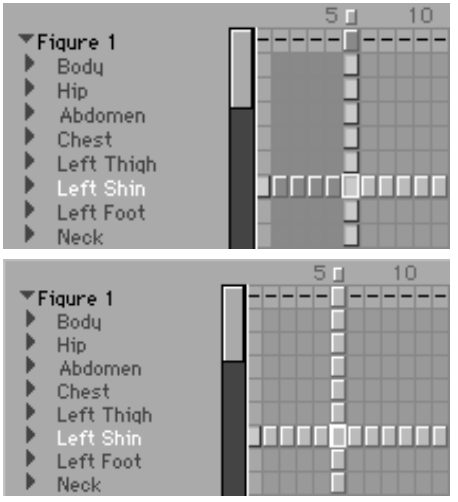
After clicking Delete Keyframe, the keyframe is removed and Poser interpolates between the previous and next keyframe.

To clear a keyframe for all elements at a given point in time:

1. Move the Current Time tab to the point in time where you want to delete the keyframe.
2. Enable the All Elements radio button.

3 Click the Delete Keyframes (-) button. You can also press the Delete/Backspace key.

To clear a keyframe for all elements, click the Delete Keyframes button for All Elements.



The selected keyframes are cleared for all elements at this time.

To clear a range of keyframes:

1 Shift-drag over the range of frames you want to clear.

2 Press the Delete key.

To clear specific keyframes:

1 Press Shift and click each of the frames you want to delete.

2 Press the Delete key.

Navigating the Timeline

You can move to a keyframe in the Timeline using the Navigation controls at the top of the palette. The This Element and All Elements radio buttons let you move to the keyframes for a selected element or to keyframes for any element.

To advance to the next keyframe for a specific element:

1 Click the row for the desired element.

2 Enable the This Element radio button.

3 Click the Next Keyframe button.

To advance to the next keyframe for a given element, click the Next Keyframe button for This Element.

To move back to the previous keyframe for a specific element:

1 Click the row for the desired element.

2 Enable the This Element radio button.

3 Click the Previous Keyframe button.

To move back to the previous keyframe for a given element, click the Previous Keyframe button for This Element.

To advance to the next keyframe (for any element):

- Click the Next Keyframe button for All Elements.

To advance to the next keyframe for any element, click the Next Keyframe button for All Elements.

To move back to the previous keyframe (for any element):

- Click the Previous Keyframe button for All Elements.

To move back to the previous keyframe for any element, click the Previous Keyframe button for All Elements.

To go to a specific frame:

1. Click to highlight the current frame display.
2. Enter the value you want. Press Return/Enter.

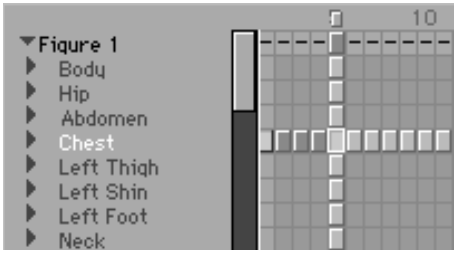
The current frame display lets you jump to a specific frame.

Moving Keyframes

As you work, you may decide you want certain keyframes to occur sooner, or later, or that you want to use the settings in one keyframe somewhere else in the animation. Poser makes this easy by allowing you to move keyframes or groups of keyframes.

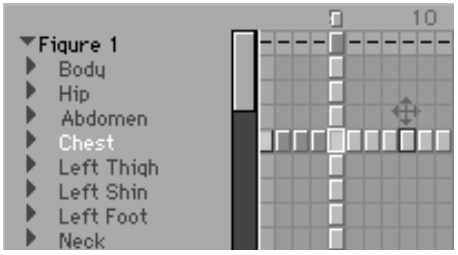
To move a keyframe:

1. Click the keyframe to select it.



Select an element and a frame.

2. Drag the colored grid cell horizontally to the frame where you want it.

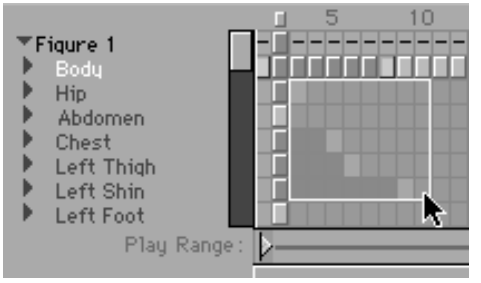


When you click on the grid cell, the cursor turns into a four-way arrow. Drag the keyframe to where you want it.

To move a block of frames:

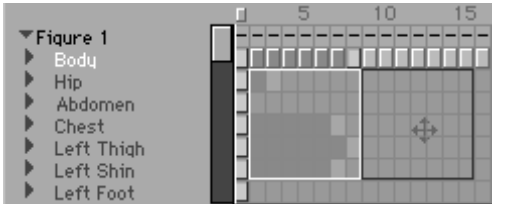
1 Drag a marquee around all the frames you want to move, or Shift-click the desired frames.

Poser outlines the selected block of frames.



Select a block of frames by *Shift*-clicking.

2 Drag the block of frames to a different position on the Timeline.



Drag a block of frames to a new location.

Copying Keyframes

You can copy keyframes, figure parts, and parameters in the Elements Listing. There are no limits to how little or much you can copy. For example, say you've fine-tuned movements over the course of an animation for parts in a Poser figures, like the Left Thigh, Left Shin, and Left Foot. You can copy keyframes and the parameter settings they represent for those parts, then paste them to other figures. In this way you could bring a set of marching Poser figures into perfect step.

By copying elements between figures, you can bring a set of marching figures into perfect step.

Although you can copy and paste keyframes across elements and objects, copying data to inappropriate parameters, like scaling data into rotation parameters should be avoided. Pasting body part parameters from left to right or

right to left can also give unexpected results. Because they are on opposite axis, you must make the copied parameter negative to get a symmetrical position.

Pasting body part parameters from left to right or right to left gives unexpected results.

To copy a keyframe to a new position on the timeline:

1. Click the keyframe to select it.
2. Option/Alt-drag the keyframe to the point in time where you want it to appear. When it's positioned, release the mouse button, then release the Option/Ctrl.

To copy a block of frames to a new position on the timeline:

1. Drag a marquee around all the keyframes, elements, or parameters you want to copy, or Shift-click the desired elements.
2. Choose **Edit menu > Copy**, or press Ctrl/Cmd+C to copy.
3. Drag a marquee around the area where you want to paste the copied information.
4. Choose **Edit menu > Paste**, or press Ctrl/Cmd+V.

   Poser pastes the copied information into the selected area of the palette.

Retime Keyframes

The **Animation menu> Retime Animation** command lets you take a motion or a set of keyframes and change the amount of time it takes for that motion to occur.

The Retime Animation command doesn't destroy any keyframes inside the source range and outside the destination range, so you can use it to repeat motions by copying them from one time to another. By selecting a motion in one area and selecting a non-overlapping destination, you remap the motion to another time without deleting the original motion.

To set retime keys:

1. Choose **Animation menu> Retime Animation**. A dialog appears asking you to fill in your Source and Destination frames.
2. For the Source frames, enter the start and end frames for the section of animation you want to retime.
3. For the Destination frames, enter the range of frames to retime the animation to.
   - If the destination range is longer than the source range, the animation is expanded, or slowed down.
   - If the destination range is shorter than the source range, the animation is compressed, or sped up. Old

keyframes that were previously in the destination range are deleted. The keyframes that were in the source range are retimed and placed in the proper time in the destination range.

4 Click OK.

Advanced Editing

The following section deals with editing an element's animatable properties and applying different interpolation methods. Both techniques are advanced features of Poser, so become comfortable with the animation process before trying these techniques.

Keyframe Interpolation

Poser interpolates the intermediate figure poses and element settings between keyframes. Interpolation refers to the way Poser calculates the "in between" position of objects/elements.

You have several options for the rules used to interpolate the poses or settings. In this way, you can make subtle changes in the animated motion.

Interpolation settings apply to a range of frames. This means you can use one interpolation type prior to a keyframe and another after it.

If the beginning and end of a selected range does not already have keyframes, changing interpolation type will automatically insert keyframes at the beginning and ending frames.

You can apply the following types of interpolation to your keyframes:

- **Spline** places intermediate poses (and settings) on a curve. The element/object accelerates and decelerates in and out of the motion.

An example of Spline interpolation.

- **Linear** places intermediate poses at equal increments so the motion is smooth and straight. The speed of motion does not change *in between* keyframes, but can change speed suddenly *at* keyframes

An examples of Linear interpolation.

- **Constant** has no intermediate poses; changes occur abruptly only at the keyframes. Whereas previous versions of Poser limited the use of Constant interpolation to the end of an animation, Poser 4 allows you to use it at any point

where abrupt change at a keyframe is required.

An examples of Constant interpolation.

- **Break Spline** stops the interpolation at the break point, so that another type of interpolation can begin. This type of interpolation is useful for ending a series of interpolated frames to begin a fresh series.

  For example, a bouncing ball has a smooth arc until it hits the floor and then starts off in another arc. With Break Spline you can create this type of abrupt change in the arc.

You can use different interpolation options depending on the motion you want. Using a walk as an example, you would use Spline interpolation for the keyframes of a foot while it's moving through the air. However, you would use Linear interpolation while it's on the ground to make it easier to keep it planted.

Interpolation types are shown in different colors on the Animation palette. Green is used for Spline, and red for Linear. A cross in the keyframe indicates that Break Spline has been applied. Keyframes that use Constant interpolation are grayed out.

To choose an interpolation method:

1. Select a range of keyframes in the Timeline Area.
2. Click one of the four Interpolation Controls.

Spline **Linear** **Constant** **Break Spline**

Select one of the Interpolation Controls.

Editing Keyframe Interpolation

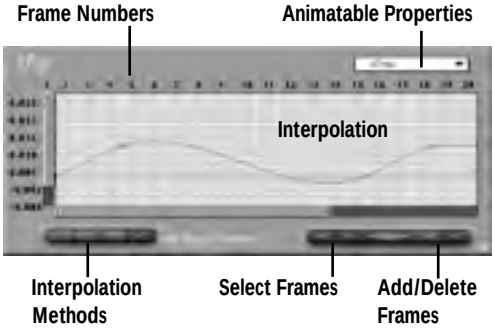
The Graph palette let you perform precise edits on keyframes and adjust the interpolation methods used in the your animation.

To display the Graph palette:

- Click the Show Graph Display button on the Animation palette.

The Show Graph Display button.

You can also double-click on an element or keyframe to display the graph for that element.



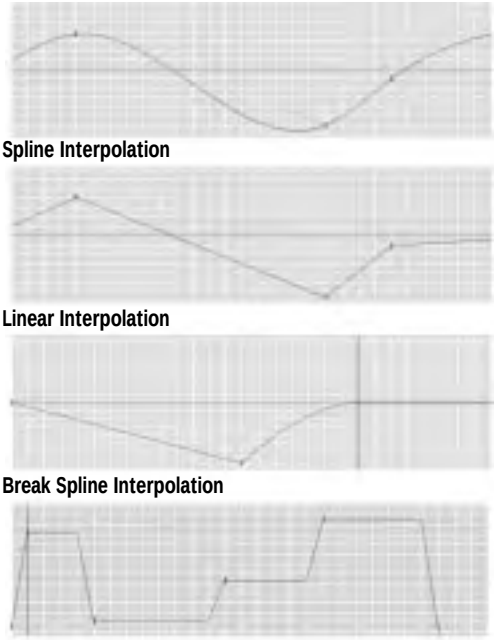
The Graph palette lets you perform precise edits on keyframes.

The palette is made up of two axes and a graph. The horizontal axis represents time in your animation, displayed as frame numbers.

The values in the vertical axis change depending on the attribute you select. If you choose a position attribute (xTrans, yTrans, etc.) the values on the axis represent positions in 3D space. If you choose a figure editing property (Taper, Bend, Side-to-Side, etc.) the values on the axis indicate degrees of change.

The graph itself shows the actual change in the selected element over the course of the animation. Depending on the selected attribute, the graph shows changes in position, rotation, scale, or tapering. The graph's shape indicates the type of interpolation used to move from one keyframe to another.

A smooth curve indicates that Spline interpolation is being used, a straight line means that Linear interpolation is being used.



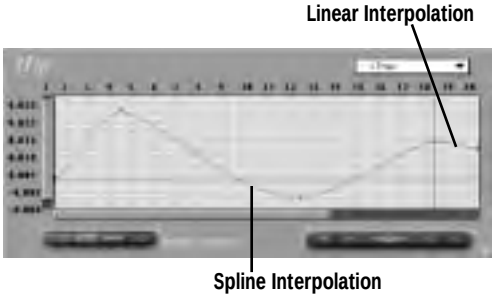
Different shapes of the Interpolation graph.

The Graph palette also provides controls for synching sound to motion in your animation. Refer to "Syncing Sound and Motion" on page 240 for more information.

Editing the Graph

You can edit the graph to achieve varying degrees of interpolation. For example, to decrease the amount of Spline interpolation, straighten the curve.

You can set the shape of the curve using the preset interpolation methods or by just dragging the curve's points until it's the shape you want. In addition, you can apply different interpolation methods to different parts of the graph.



A graph showing different interpolation methods.

Note

Remember, you're affecting how the figure moves as you change the shape of the graph, so make sure that the graph reflects the type of motion you want to create.

To edit the shape of the graph:

1. Click the popup at the top of the palette and choose the attribute you want edit.
2. Drag any point on the graph in the direction you want to move the curve.

   Depending on the type of interpolation you've applied to the curve, it reshapes either smoothly or linearly.
3. Use the Scrollbar to view points that fall outside of the current graph window.

To change the type of interpolation applied to the graph:

1. Drag over a portion of the graph to select it.

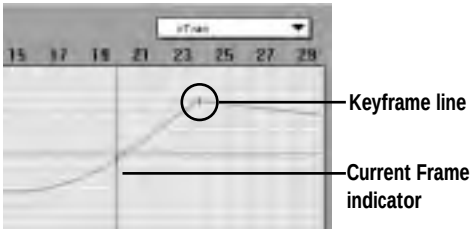
   The selected portion is highlighted.
2. Click one of the interpolation method buttons at the bottom of the dialog.

   The graph is re-shaped using the selected method.

   If you have a range of frames selected in the Animation palette, changing the interpolation method can add new keyframes.
3. Use the Scrollbar to view points that fall outside of the current graph window.

Editing Keyframes on the Graph

The vertical lines on the graph represent keyframes. You can move these points, to change when keyframes occur, or you can add new keyframes.



Keyframes on the graph.

The Current Frame indicator lets you know which frame you're currently working on.

To select a keyframe:

- Click the Next Keyframe or Previous Keyframe button.

Use the Next Keyframe or Previous Keyframe to select keyframes.

You can also click on a black keyframe line on the graph, or drag the Current

Frame indicator to the frame you want to edit.

To select a range of keyframes:

- Drag an area around the desired frames. A selected area is highlighted in dark grey.

To reposition a keyframe:

- Select a keyframe and drag it to a different position on the graph.

To add a keyframe:

1. Move the Current Frame indicator to the position where you want to add a frame.
2. Click the Add Keyframes button.

To duplicate a portion of the graph:

1. Drag across an area of the graph to select it.
2. Choose **Edit menu > Copy** (or press Ctrl/Cmd+C).
3. Position the cursor where you want to insert the copy.
4. Choose **Edit menu > Paste** (or press Ctrl/Cmd+V).

To move a keyframe:

- Command/Ctrl-drag a key or range of keys to a new point in time.

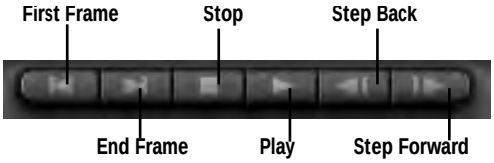
To delete a keyframe:

1. Move the Current Frame indicator to the position where you want to delete a frame.
2. Click the Delete Keyframes button.

Previewing Animations

You can preview animations using the VCR style controls in the Animation Controls or the Animation palette.

When you use the Preview controls to preview your animation, the animation plays in the Document window. The quality of the preview depends on the current display style and Tracking mode that's currently enabled. Refer to "Previewing Your Figure" on page 37 for information about display styles and refer to "Figure Tracking" on page 30 for information about tracking modes.



Use the Preview Controls to preview your animations.

Play starts the animation. While the animation plays, the readouts display the current frame and time. The Play button becomes the Pause button during a preview.

Stop halts play and jumps the animation to the first frame.

Pause halts play at the currently displayed frame.

Fast Forward advances to the last frame of the animation.

Rewind returns to the first frame of the animation.

Step Reverse moves back one frame.

Step Forward advances to the next frame.

The **Loop** radio button plays the animation over and over again until you stop the playback.

When disabled, the **Skip Frames** radio button displays all frames in the animation. When enabled, frames drop from the preview to speed up play.

To preview an animation in the Document window:

1. Click the Play button in the Preview controls.

   The Play button becomes the Pause button.

2. Click the Stop button to stop the preview.

To view a specific keyframe:

- Click either the Previous Keyframe or Next Keyframe button in the Keyframe controls.

The Previous and Next Keyframe controls.

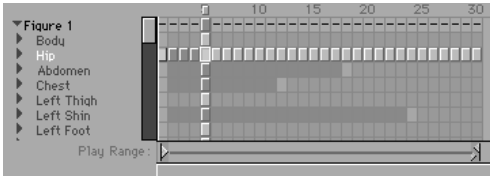
   The Document window changes to display the poses in the selected keyframe.

Setting the Play Range

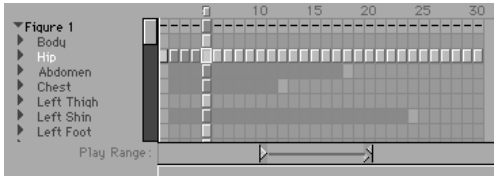
By default, you preview the entire animation when you click the Play button; however, you can choose to play only a section of your animation. You can adjust the length of the Loop Range bar in the Animation palette to set in and out points for the preview. Only frames between the in and out points play.

To change the range:

1. Drag the end of the Play Range bar to set the in or out point of the preview.



The Play Range bar sets which frames will play. In this case, Poser plays all frames of the animation.



Drag the ends of the Play Range bar to set the range of frames. In this case, Poser plays frames 5 through 19.

Using the Libraries Palette for Animations

The Libraries palette lets you save single frames or multi-frame poses. A multi-frame pose is an animated figure.

Adding an Animation to the Library

When you add to the Poses category Libraries palette, Poser asks whether you want to save one or multiple frames. For a multi-frame animation, you can specify the range of frames.

When you name the animation for the library, consider including the number of frames in its name. For example, name a listing Strut_48 to indicate that this animation has 48 frames. This information is helpful later when you use the animation.

Using a Multi-Frame Animation from the Library

When you use an animation from the library, Poser applies it to a series of frames, beginning with the current frame. The series extends the number of frames in the saved animation. However, it does not exceed the number of frames in the current document. You may have to increase the number of frames in the animation to make room for all the keyframes in the saved pose.

Scale changes are not stored in pose sets. This allows you to use stored poses for reproportioned figures without modifying their scale. Animated scale changes are not stored in pose sets.

To add a multi-frame animation from the Libraries palette:

1. If the scene has more than one figure, select the figure you want to apply the animation to.
2. Select the frame where you want the animated sequence to begin. Frame #1 of the library animation applies to the current frame.
3. Make sure you have enough frames to accommodate the multi-frame pose. You may need to add frames to the file or move a set of keyframes farther to the right.
4. In the Libraries palette, click the Poses category button.
5. Click the Poses popup and choose Animation Sets.
6. Double-click the preview of the set you want to use.

10

Animation Techniques

The animation process begins with the creation of keyframes and poses, but it certainly doesn't stop there. A simple jerky motion can become a smooth flowing one, if you just know a few techniques for using Poser's tools to their full potential.

The techniques described in this chapter will help you create more realistic motion and enhance your basic animations.

Setting Keyframes

How do you know how to space keyframes? You have to consider time and frame rate. You should space keyframes so that at the chosen frame rate, the animated action takes the right amount of time.

- Frame Rate x Duration = Number of Frames

The duration refers to how long it should take the figure to move from Point A to Point B.

For an example, we'll look at a simple animated action—getting up from a chair. In this action, the extremes are (1) sitting in the chair (2) standing in front of the chair. These are the keyframes we'll set.

Two examples of keyframes.

Decide on the duration of the action. You may want to time yourself getting up from a chair to get a better idea. Let's say the action should take three-quarters of a second (0.75 sec).

At a 30 frame per second rate, you can calculate the number of frames for the action: 0.75 • 30 = 22.5

Dropping the decimal, you see it should take 22 frames to complete the action.

With the first keyframe (sitting in the chair) at frame #1 of the Poser animation, you should place the second keyframe (standing in front of the chair) at frame #21.

Set these keyframes, then work in, adding more keyframes to improve the motion.

Creating Realistic Motion

The key to human motion is to examine the parts of the move. If you look at a baseball player's swing, it looks like the arm is simply moving in an arcing motion. However, on closer inspection you can see that the motion is a combination of the hips, shoulder, hand, neck, head, back and arm. To create this kind of motion in Poser, you work from the large motions to the smaller ones.

The first thing you do to create a motion is "rough out" the larger movements. In the case of the baseball swing, determine where the arm starts at the top of the swing and where it ends up a the end of the swing. In Poser, these two points are determined by two keyframes: one for the start, the other for the end.

A motion starts with large actions.

Once the larger motions are set up, you can start adding in the smaller, more subtle, motions. Continuing the baseball swing example, start by adding in the hip swings, the shoulder tilt and so on. It is these smaller motions that make the entire action look

realistic. Poser's Animation palette is ideal for adding these little motions. In the palette, you can add keyframes in between the frames for the start and end of the swing.

The more you examine a motion, the more you see the smaller, or secondary motions, that make up the action.

Working this way, you an create almost any kind of action. When you start, first examine the big movements, then fill in the smaller, or secondary motions, in between the big movements.

Making Your Figure Walk

One of the most complicated human motions to simulate is the simple act of walking. What appears on the surface to be a rather straightforward matter—just put one foot in front of the other—is actually an incredibly complex interaction between a variety of muscles in the legs and torso. Realistic walking motion would normally take a great deal of precision posing. However, with the Walk Designer, it is just a matter of setting up a few parameters and letting Poser do the rest.

Creating a walking figure is a two step process: first determine the walking path through the studio, then determine how the figure walks.

Creating a Walk Path

Before you design *how* the figure walks, you must determine *where* it walks. This is what the Walk Path is used for. The path is a line or curve you draw in the Document window to set the figure's course as it moves about the studio. When you apply the walk, the figure starts walking a the start of the path and stops at the end of the path.

A Walk Path in the studio.

To draw a walk path:

1 Choose **Figure menu> Create Walk Path**. A path appears in the studio.

2 Click one of the Editing Tools and adjust the position or shape of the path.

Click on a point to reshape the path, or click on the ring that surrounds the entire path to reposition it.

Designing a Walk

Walks are designed in the Walk Designer. As its name suggests, the designer lets you create realistic walking motions which you can apply any human figure. The designer has two sections: the upper set of controls let you create the larger motions of a walk, the lower set of controls let you set up the secondary motions of a walk.

Use the Walk Designer to define the characteristics of the walk.

The designer provides a real-time preview of the walk. As you change the parameters, the walking figure in the preview also changes. Load in a prototype style that matches the figure-type you're animating and see an even more realistic preview.

Tip

Changes you make to the foreground, background, and shadow colors in your Poser Workspace are reflected in the real-time preview in the Walk Designer.

To design a walk:

1 Choose **Window menu> Walk Designer**. The Walk Designer dialog appears.

2 Click Figure Type to select a preview style that matches the figure-type for which you are designing a walk.

In the **Poser: Runtime: Libraries: Characters: People** folder, select the prototype style you want to preview.

Note

Using a Figure Type is not required, but be sure to select a Figure Type if you need to collect walk data for articulated body parts present in your Poser figure, like articulated feet or hands. Poser 3 Low Res Figure Types work well for this purpose.

Using a Figure Type that matches your Poser figure-type assures collection of walk data for articulated body parts present in your Poser figure.

3 Click Walk to start the real-time preview of the walk.

Note

Using a preview Figure Type slows the real-time preview.

4 Drag the Blend Styles sliders to set the large motions of your walk.

5 Drag right to increase the intensity of an action, or left to decrease the action.

Try several settings in conjunction. You may have to combine more than one attribute to get the desired walk type.

6 Adjust the positions of the Tweaks sliders to set the smaller, or secondary, motions of the walk.

You can click Defaults to reset the sliders to their default positions.

7 Click Apply to apply the walk to a Walk Path.

The Walk Apply Dialog appears.

8 Set walk options and click OK. Refer to "Applying a Walk" on page 236 for more on walk options.

Click Done to exit the dialog without applying the walk.

Editing a Walk

A Walk Path is a spline curve that always lies on the ground (the z-component is always zero). You can edit the shape of the curve by adding, deleting, and moving its control points.

Note

The default walk path is a spline curve with four control points. You can create a straight line by deleting the middle two control points.

To add a control point:

- Click a point on the curve (not on a control point).

To move a control point:

- Click a control point, then drag.

To delete a control point:

- Alt/Option click a control point.

Saving a Walk

A walk path is a special kind of prop. You can save the path in the prop library to reuse later. You can use editing tools, like scale or rotate to transform the walk path, as you would other types of props.

To save a walk:

1. Set up your walk by adjusting the sliders.
2. Click Save.
3. Choose a location and filename for your walk and click Save.
4. Click Done to exit the dialog, or click Apply to apply the walk to a Walk Path.

Loading a Walk

To load a walk:

1. Click Load. The Open dialog appears.
2. Locate the walk you want to load and click OK.

Applying a Walk

There are several options you can set when applying the walk to a Walk Path. The WalkApplyDialog provides options for setting where the walk begins, how the walk effects the animation, and the behavior of the figure as it walks.

To display the WalkApplyDialog:

1. Choose **Window menu> Walk Designer**. The Walk Designer dialog appears.
2. Set your walk characteristics as described in the previous section and click Apply. The Walk Apply Dialog appears.

The WalkApplyDialog.

Start Frame and End Frame

When you apply a walk, you can set the frame where it begins and the frame where it ends. The more frames you assign for the walk, the more natural the motion is.

Figure and Path

If you have more than one figure or path in the studio, you can use these popup menus to choose a specific Figure to use for the walk and a specific Path to follow.

Walk In Place

This option makes the figure walk in a single spot. When this option is enabled, the figure does not walk along the path.

Cycle Repeat

This field indicates how many times you want a walk to repeat along the path.

Always Complete Last Step

This option forces the walk animation to complete within the allotted time. If you find that the walk stops in mid-stride at the end of your animation, enable the option. This forces the walk animation to end at the same time as your animation.

Transition from/to Path Start In/End In

These two options can be used to create smooth motion from your pose into and out of the walk. When these options are enabled, Poser interpolates between the pose of the figure before the walk, and between the last position of the walk and the final pose creating smooth transitions.

The frames fields let you determine how many frames Poser uses to accomplish the transition.

For example, you can use this option to quickly set up a runner animation. You can create the crouched starting position of the runner, and a finish line pose, then enable the Transition options. When you apply the run you designed, the figure moves smoothly from the crouch, into the run, and then into the finish line pose.

An example of the Transition options used to create smooth motion.

Align Head

The Align Head options let you control how the figure's head acts as it moves along the Walk Path.

One Step Ahead keeps the head aligned with the body. As the figure changes direction, so does the head. This options produces the most changes in head position.

End of Path keeps the head aligned to the end point of the path. The head remains pointed at the end of the path regardless of the direction of the body.

Next Sharp Turn aligns the head to the turns in the path. The head only changes positions when there's a curve in the path.

Animating Cameras

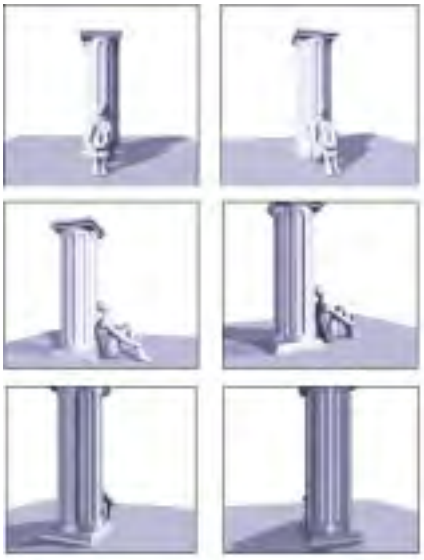
When the camera is animated, the view of your scene changes over the course of the animation. The moving viewpoint adds interest to the animation. Watch a movie and pay attention to how much the camera moves. You may be surprised.

The camera can be animated just like any other object in the studio, and since it is in 3D space, the camera can slowly rotate around the figures, zoom in for a close-up or sweep high for a birds-eye-view. The cameras are animated by storing their properties (such as position) as part of a keyframe. This means you can create camera keyframes exactly the same way you create posing keyframes.

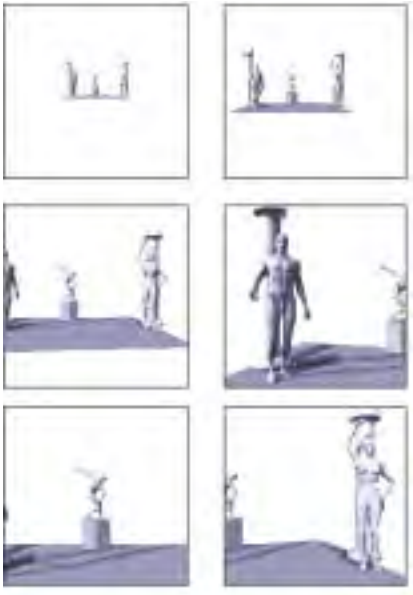
The camera's motion depends on which camera you use to render your animation. The Main Camera rotates around the center of the studio. The Dolly Camera rotates on its own center as if it were on a tripod. This difference allows the Dolly Camera to move through the scene in ways that are not possible with the Main Camera. If you want to emulate a motion picture camera, use the Dolly Camera.

The Face and Hand Cameras rotate around the face and hand of the figure, so animating these cameras gives you moving views of the figure's body parts.

You can only make a movie from one camera. You can't switch cameras in an animation or animate between different cameras. If this is what you want, you should make separate clips, then edit them together in a movie editing application.



Animating the Main Camera—it orbits the studio.



Animating the Dolly Camera allows you to move the camera to the center of the studio.

Turning Camera Animation On or Off

By default, every camera movement can be recorded as a keyframe. But there may be times when you only want the figure to be animated, not the camera. In this case you can turn camera animation off. When the camera's animation if disabled, you can move it freely during your animation without changing the view of the studio.

Animation can be turned on or off for each individual camera. The key-shaped icon in the Camera controls indicates whether camera animation is on or off. When the icon is white, animation is on. When it is red, animation is off.

The Animation indicator.

If you want to record changes in camera position while camera animation is off, you'll have to manually add a new frame. Refer to "Adding and Deleting Keyframes" on page 213 for more on adding frames.

Animating Lights

Like cameras, light properties can also be recorded into a keyframe. During the course of an animation, a light can change color and position. As the lights move, the shadows they cast move with them.

Animated lighting can produce exciting effects. You can show a figure caught in the headlights of a passing car or a figure illuminated by lights in a storm.

Lights are animated by storing the position and color and of the Light Controls in a keyframe. This way you can animate a light exactly as you would a camera or body part.

For lights, the default animation interpolation is Spline. When animating changing light colors, use Linear or Break Spline interpolation. The Spline type of interpolation can be more difficult to control. Keep in mind interpolation applies to both light color and position, they cannot be interpolated independently.

Animating lights. As light position change, shadows follow.

Adding Sound

Poser lets you import sound clips that can play as a soundtrack for your animation. When you import a sound, it is added to the beginning of the animation and plays every time you play the movie.

You can control the sound's start and end point in the Animation palette.

To import a sound:

1. Choose **File menu> Import> Sound**. An Open dialog appears.
2. Locate the sound file you want to add and click Open.

   The sound file is attached to the animation at the first frame. The sound plays whenever the animation is played.

Editing Sound

When you import a sound, its duration appears in the Sound Range bar at the bottom of the Animation palette. You can clip the sound file by shortening the length of this range bar. You can use the bar to control when the sound begins. However, if the Sound Range starts at any frame other than Frame 1, the beginning of the sound is clipped.

For information on accessing the Animation palette, refer to "Editing Animations" on page 213.

Sound in the Animation palette.

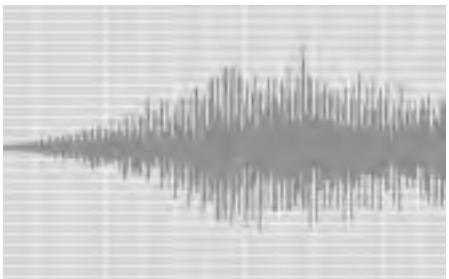
To clip a sound file:

- Drag the end of the Sound Range bar to the left.

Syncing Sound and Motion

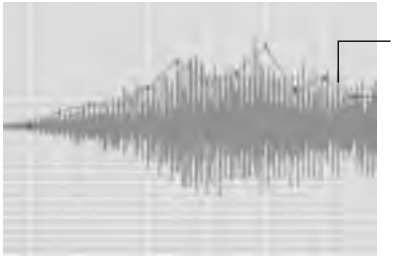
The Graph palette displays a graphic representation of the sound file, called a *waveform*. This lets you see where the changes in sound occur. Using this information you can then position keyframes to happen at the same time spikes in the sound file occur.

For information on accessing the Graph palette, refer to "Editing Keyframe Interpolation" on page 225.



Sound in the Graph palette.

You can simulate speech using by matching the peaks in the sound file with the changes in mouth position.



Syncing sound and motion.

To display a waveform in the Graph palette:

1. Display the Graph palette, by click the Show Graph Display button in the Animation palette.
2. Click the Toggle Sound Display button. The waveform appears in the palette.

The Toggle Sound Display button.

Using Poser with Other Motion Graphics Programs

Poser does a great job of animating the human figure. However, there are animation techniques and movie-making tasks that you can accomplish in other programs.

Typically, you'll want to create relatively short animation clips in Poser. You can then open these clips in another program for post-production work, like retouching or adding other animated foreground elements.

After you've prepared a series of clips, you can assemble them in a movie-editing program. At this point, you can also incorporate the soundtrack.

In addition, you can render your animation with an alpha channel. This lets you overlay your Poser animation in a video composition application. Refer to "Rendering an Animation" on page 264 for more on rendering.

Motion Capture and Animations

Poser can read stored motion capture files, known BVH files. These files let you apply stored human motion to your 3D models. BVH files enable you to create incredibly realistic motion without setting up a large number of keyframes.

BVH files are created using motion-capture hardware. Reflectors are attached to a figure's joints. As the figure moves, the position and rotation is captured in 3D space at different points in time. Each point of time is then keyframed together to create a smooth animation. Since this process creates literally thousands of keyframes, no interpolation is needed to create smooth motion.

Importing and Exporting Motion Capture Files

BVH files can be imported and exported like any other file type. Sample BVH files are stored in the **Coolstuffinhere!:motion capture** folder on the Poser 4 CD-ROM.

To import a BVH file:

1. Choose **File menu> Import> BVH motion**.

   The Import dialog appears.

2. Locate the desired file and choose Open.

To export a BVH file:

1. Choose **File menu> Export> BVH motion**

   This may take several minutes, depending upon the complexity of the file.

Setting the Align Axis

You can set whether a figure's arms are aligned on the X or Z axis during the import process. The align axis is determined at the time of recording. It is important to choose the right axis or your figures will look incorrect.

To determine the correct axis for the BVH files on the Poser 4 CD-ROM, read the Biovision README or the House of Moves README. If you're using other BVH files, you need to contact the developer of the motion capture data with which you are working.

Editing Keyframes

The BVH keyframes are applied to the current figure when imported. You can edit BVH keyframes as you would any other animation.

BVH file in the Animation palette.


POW
THE TRAP IS SPRUNG!
SLAMM
LET'S GET DR. PLANES.
NO ANNA, WE NEED TO FIND HIS POWER SOURCE.
POSER 4
AHHH...
AT LAST. KARL AND ANNA FIND THE SOURCE OF ALL DIMENSIONAL POWER

11

Surface Materials

How Surface Materials Work

A surface material defines the surface properties of an object in the studio. A material can turn a human figure into a statue or a glass sculpture. Surface materials provide fur for animal models or scales for the reptile models.

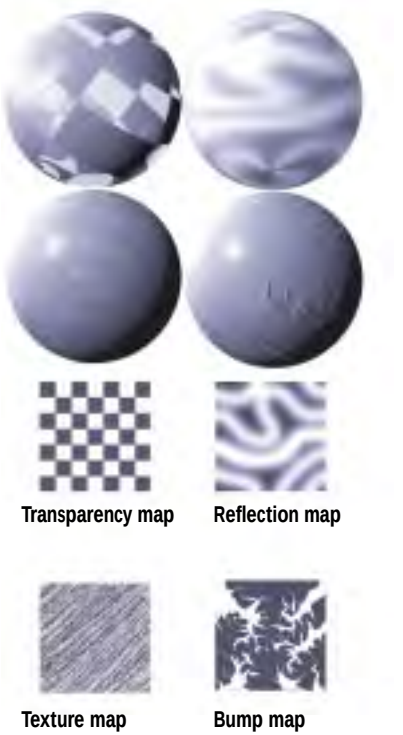
Poser provides several features for customizing the surface of the figure, props, and ground plane. These features include Bump maps, Texture maps, Transparency maps, Reflection maps, and surface material color.

The Bump map determines the shape of bumps or dents on the object's surface. It can create the effect of cracks in rock or raised patterns. The Texture map determines the patterns of colors on the surface. The Transparency map determines an object's translucence. The Reflection map lets you

make a texture appear to be mirrored in an object. The surface color determines the base color of the object and the color of its highlights.

Poser also provides several map templates that let you create your own custom surface material maps.

Surface maps can be used in conjunction to create a surface. For example, you can use the Texture map to create the pattern of rock veins for marble, and a Bump map to create the cracks in the rock. By combining different surface material maps you can recreate almost any type of surface.



A Bump and Texture map combined.

Note

Surface Material maps do not appear until a scene is rendered. For details on rendering, refer to "Rendering" on page 259.

Applying Surface Materials

Surface material maps are applied with the Surface Material dialog. You can load surface materials for any object in the studio, as well as set object, highlight, ambient and reflective colors.

The Surface Material dialog.

You can select and set surface materials for objects—figures and props—in the scene, or individual body parts on a figure.

To display the Surface Material dialog:

- Choose **Render menu> Materials**.

  or

  Click the Surface Material button in the Render Options dialog.

To choose an object to edit:

- Choose the desired object from the Object popup. The changes you make in the surface properties are applied to the selected object.

To turn off a surface material:

- Choose No Bump and No Texture from the surface material Map popups.

Applying Materials to Body Parts

Surface material maps can affect either a whole figure or to just a part of it. Some figures, like animals and Poser's People models, have maps for each individual figure part. Other figures, like the Poser 2 models, have one map for the entire figure. The Surface Material dialog lets you pick the exact figure and part to use for a specific map, so you can use one map for the head and a different map for the arm.

An object with different materials on the head and shirt.

The parts listed in the Material popup depend on the currently selected figure.

To apply a map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure or object you want to edit from the Object popup. The changes you make in surface properties are applied only to the selected figure or object.
3. Do one of the following:
   - To apply a map only to a selected body part, choose the part from the Material popup.
   - To apply the map to an entire figure, enable the Texture Changes apply to entire figure checkbox.
4. Select a texture, bump, transparency, or reflection map from popup.

   If the map you want to apply isn't listed in the popup, click Load. Poser default maps are located in the **Poser:Runtime:Textures** folder.

   Locate the desired map and click OK.

   The surface material map is applied, and appears when the scene is rendered or previewed in Texture Shaded style.

Applying Materials to Specific Regions

You can apply surface materials to specified regions of a body part or prop. For example, you could apply a scar to a face, or hair on a chest.

A surface material applied to a group.

To do this, use the grouping tool to select the polygons of the element or prop. You can specify a created group, and that group appears in the Material popup of the Surface Material dialog.

To use the grouping tool:

1. Click the Grouping tool in the Editing menu.

   All figures and objects in the studio become gray, and the Group Edit palette appears.

2. Click to select the body part you want to group.

3. Click individual polygons, or drag the cursor over a group of polygons to select them.

   - To deselect individual polygons, hold down the Control key while clicking or dragging.
   - To select polygons that are currently out of view, either use Wireframe display style or use the camera trackball to change the view of your figure.

4. In the Group Edit palette, click the Assign Material button.

   For complete details on the Group Edit palette, refer to "Using the Group Edit Palette" on page 158.

5. In the dialog that appears, enter a name for your material group, then click OK.

6. Select **Render menu> Materials**.

7. In the Surface Material dialog that appears, choose the figure or object for which you set the material from the Object popup.

8. Choose your material group from the Material popup.

9. Select a texture, bump, transparency, or reflection map from the appropriate popup.

   If the map you want to apply isn't listed in the popup, click Load. Poser default maps are located in the **Poser:Runtime:Textures** folder.

   Locate the desired map and click OK.

   The surface material map is applied, and appears when the scene is rendered.

Applying Maps to Props

Poser uses Implicit (UV) mapping to apply a map image to the 3D model. The props you import must have UV coordinate information for Poser to apply maps to them.

If models don't have UV information, mapping is not possible. DXF models and models created in certain programs do not carry UV data. Try using another format, such as Wavefront OBJ, Detailer text, or 3DMF.

Applying Bump Maps

A Bump map is a special image, wrapped around the object, that works with the studio lighting to give the appearance of 3D texture on an otherwise smooth object. For example, you can import a crackly surface to give the figure the look of a cracked statue. Or, by importing different Bump maps onto different figure parts, you can create effects like a rough shirt on smooth skin.

A figure with different Bump maps applied to the hand and shirt.

Bump maps can also enhance the appearance of props. For example, making smooth bars into stone columns or a torus into a tire tube.

Bump maps appear when a scene is rendered or previewed in Texture Shaded style.

To load the default Bump map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the default map for this figure type from the Bump Map popup. For example, if you're using the Nude Man, choose the Nude Man texture. You may need to load a map. Do do this, click Load, then select a directory and file in the dialog that appears. Poser default maps are located in the **Poser:Runtime:Textures** folder.
3. Adjust the position of the Bump Strength slider, to set the level of surface relief. The range is from -100% to 100%. Negative values invert the bump—what was raised becomes depressed.

To clear the Bump map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose No Bump from the Bump Map popup.

   Not all figures and props have Bump maps, but you can create them for any figure or prop.

Creating a Custom Bump Map

A Bump map is a grayscale image that Poser uses to determine which areas of a surface are indents and which are bumps. You can create a Bump map from any grayscale image.

Using a grayscale image, you can create a surface "terrain." The darker you paint, the more depression you create on the surface of the object. Use 50% gray for medium depressions and solid black for deep indentations. Save your bump map document as a PICT (Macintosh), TIF, or BMP (Windows) file. Poser automatically converts the image into a Bump map, where you can save it under a new name.

By customizing the Bump map, you can add wrinkles, buckles, or blemishes. You can use any type of image. For example, you could create a Bump map with scales to mutate a figure into a reptile.

When creating a custom Bump map, consider these suggestions:

- Use an 8-bit, gray scale image. The brightness of a map's pixels is the only factor used, and an 8-bit image requires less memory.
- Bump maps do not require a 1:1 ratio to the final resolution. Increasing the dimensions does not necessarily improve definition in the final rendering. It does, however, require more memory to load, making Bump maps difficult to load on some systems.
- If you do increase the image dimensions, be sure to maintain the proportions. Keeping this aspect ratio is crucial for Poser to wrap the image onto an object.
- As you paint a Bump map, use an airbrush tool or another brush that creates smooth edges. The smoother the transitions in a custom map, the smoother the appearance of your rendered figure or object. Hard edges create blocky forms on a rendered object.

To load a custom Bump map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Click the Load button in the Bump Map section. An Open dialog appears.

Loading a custom Bump map.

Note

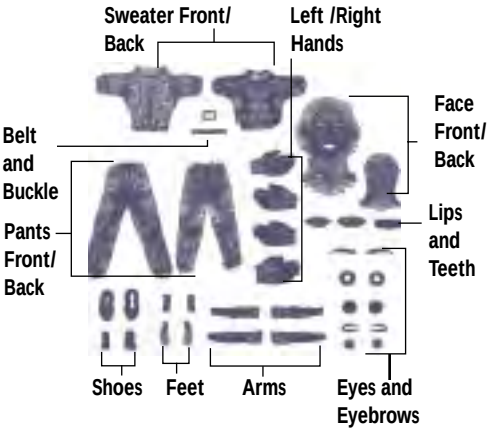
If you select an image file, Poser asks if you want to convert it to a Bump map. Conversion takes a little while; the status bar on the Document window displays the progress.

3. Select a Bump map (.bum) or image file.

Using Templates

If you did a complete install, templates are provided in **Poser:Runtime:Textures**. If you didn't, look for the templates on the Poser 4 Application CD-ROM in the Textures folder.

By editing the maps in this template you can edit the different parts of the figure. For example, you can use an image-editing application like Painter to paint a grayscale pattern of the map of the face. When you apply the template, the edited template produces bumps on the face.



A sample Texture template.

The Bump map template applied to a figure.

To apply an edited Bump map template:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure or object you want to edit from the Object popup.
3. Do one of the following:
   - To apply a map to a specific part, choose a part from the Material popup.
   - To apply the map to the entire figure or object, enable the Texture Changes apply to entire figure checkbox.
4. Click the Load button in the Bump Map section. An Open File dialog appears.
5. Locate the edited template file and click Open. The bump map is applied to the figure, object or part you selected, and will appear when the scene is rendered.

Applying Texture Maps

Texture mapping is a 3D technique that wraps an image around an object to paint its surface. A real-world parallel to using a Texture map would be to rip a picture out of a magazine and physically wrap it around an object, like a baseball or drinking glass.

Poser's default Texture maps provide shading to enhance the appearance of the figures. You can create a custom Texture map to change the fabric of the clothes or to color any other feature on your figure.

Like Bump maps, different Texture maps can be applied to different body parts. Using this technique, you can have a unique pattern on the shirt of a figure and a different texture for the skin tones.

The Texture map image for the Poser 2 male casual figure.

To load the default Texture map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose a Texture map for this figure type from the Texture Map popup.

To clear the Texture map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose No Texture from the Texture Map popup.

Creating a Custom Texture Map

You have a few options for creating custom Texture maps. You can use an image or you can paint your own.

To create a custom Texture map, you need to create an image file. When you design your custom Texture map, you are "painting" the surface of your Poser figure. Make a texture or pattern, or paint a skintight super-suit for a comic book hero.

When creating Texture maps, keep the following tips in mind:

- Usually, 8-bit color is all you need for a Texture map. Images with a color depth of 16 or 24 bits require more memory, which can make them difficult to load on some systems.
- You probably don't need to increase the dimensions of the template image. The template size is good for most uses. If you do increase the dimensions, be sure to maintain the proportions. Keeping this aspect ratio helps Poser wrap the image onto the figure.

To load a custom Texture map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. In the Texture Map section, click the Load button. An Open dialog appears.
3. Select your custom Texture map and click Open.
4. Use the Strength slider in the Texture map section to adjust the intensity of the Texture map. You can lighten the Texture map by setting the slider lower.
5. Use the Apply Texture to Highlight checkbox to control whether highlights are pure (disabled) or combined with the texture (enabled). When disabled, you can

get shiny spots on a black area of the texture.

Using Templates

If you did a complete install, templates are provided in **Poser:Runtime:Textures**. If you didn't, the templates can be found on the Poser 4 Application CD-ROM.

Bump, Texture, Reflection, and Transparency maps are found in the Textures folder. The templates let you precisely align the image you paint with the figure.

The template provides Texture maps for every available part of a figure. They contain maps for everything from teeth to the shoe laces. By painting on the template, you can edit the color or pattern of a body part.

The Texture map template applied to a figure.

When you have modified the Texture map, save it as a PICT (Macintosh), TIF (Windows) or BMP (Windows) file. Put it in the Poser Textures folder for easy loading.

To load an edited Texture map template:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure you want to edit from the Object popup.
3. Do one of the following:
   - To apply a map to a specific part, choose a part from the Material popup.
   - To apply the map to the entire figure, enable the Texture Changes apply to entire figure checkbox.
4. Click the Load button in the Texture Map section. An Open dialog appears.
5. Locate the edited template file and click Open. The texture is applied to the figure.
6. If you edited other body parts, choose the body part you want to change from the Materials popup.
7. Click the Texture Map Load button again and load the edited template file.
8. Continue selecting body parts and loading the template file, until all the body parts on your figure have the desired Texture map. The textures will appear when you render the scene.

Applying Transparency Maps

Transparency allows light pass through a figure or object, so you can see through it. The higher a transparency value, the more of the surrounding environment is visible through the object's surface. If no light is reflected on an object, a 100% Transparency Min and Max makes it invisible.

Use transparency maps for interesting effects in your creations. For example, you can create ghost-like characters in a scene, with transparent bodies mapped with patterns or textures.

When a transparency map is applied to an object, its texture interferes with the transparency of the object. For example, a checkerboard map results in an object that is alternately transparent and solid. You can thus use textures as transparency maps.

The Transparency map applied to a sphere.

To load a Transparency map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose a Transparency map for this figure type from the Transparency Map popup.

To clear the Transparency map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose No Transparency from the Transparency Map popup.

Creating a Custom Transparency Map

You have a few options for creating custom Transparency maps. You can use an image or you can paint your own. When creating Transparency maps, use an 8-bit, gray scale image; do not use color. The brightness of a map's pixels is the only factor that matters, and an 8-bit image requires less memory.

To load a custom Transparency map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure you want to edit from the Object popup.
3. Do one of the following:
   - To apply a map to a specific part, choose a part from the Material popup.
   - To apply the map to the entire figure, enable the Texture Changes apply to entire figure checkbox.
4. In the Transparency Map section, click the Load button. An Open dialog appears.
5. Select your custom Transparency map and click Open.

Using the Transparency Sliders

The Transparency Min, Transparency Max, and Transparency Falloff sliders work together to determine how an object's transparency behaves.

Transparency Min refers to the edges of the object facing away from the eye. A high Transparency Min value makes the object very transparent on its edges.

Transparency Min at a lower value

Transparency Min at a higher value

Lower and higher Transparency Min values.

Transparency Max refers to the part of the object which points at the eye. A high Transparency Max value makes the object very transparent in the center facing the eye.

For most renderings, you'll want to use a Transparency Max value that is higher than the Transparency Min value.

Transparency Falloff determines the rate at which the transparency becomes opaque on the edges of an object. For a real world example, look at a transparent object such as a drinking glass. The edges of the glass are less transparent than the rest of the surface. This is where transparency of the glass "falls off". In Poser, you can vary this falloff behavior. A smaller value renders a smaller falloff band, while a larger value renders a wider band

Three different falloff rates.

If the Transparency Min and Max values are the same, there is no falloff in the rendering.

Applying Reflection Maps

Reflection makes a figure or object direct light back at its source, giving it a mirrorlike appearance. A Reflection map is a 2D texture applied to a virtual sphere that surrounds your studio. The texture is then reflected from the studio and onto your object.

Reflection maps can be applied to different objects and body parts. For example, you could create a space alien and apply a mirror-like reflection map to the head, or the entire body.

A Reflection map applied to a figure.

To load a Reflection map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure you want to edit from the Object popup.
3. Do one of the following:
   - To apply a map to a specific part, choose a part from the Material popup.
   - To apply the map to the entire figure, enable the Texture Changes apply to entire figure checkbox.
4. Click the Reflection Map popup to choose a Reflection map.
5. Use the Strength slider in the Reflection map section to adjust the intensity of the map. The higher the value, the more reflective the surface. At 50%, half the light that hits the object is reflected. At 100%, all light is reflected.
6. Control the intensity of the reflection with these checkboxes:
   - The Multiply through lights checkbox reduces the reflection's intensity based on how the figure is lit by the lights. This is an easy way to add subtlety to the lighting.
   - The Multiply through Object Color checkbox reduces the reflection's intensity by multiplying its result through the object's color. So, for example, a red object would get a reddish reflection instead of the raw color from the reflections map.
7. To add a Reflective Color, click its button. Choose a color from the color picker dialog, then click OK. The reflective color appears when you render the scene.

To clear the Reflection map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose No Reflection from the Reflection Map popup.

Reflective Color

Reflective Color is a tint that is added only when a reflection map is applied. Use the Reflective Color control to create dramatic effects in your renderings.

To make a highly reflective object appear more vivid, use a variation of the object's color. If the object's color is particularly bright, you may want to use a darker tint of the same color. For an unusual tint, use a color that is distinctly different from the object's color.

Creating a Custom Reflection Map

You have a few options for creating custom Reflection maps. You can use an image or you can paint your own.

When creating Reflection maps, keep these points in mind:

- The image in a reflection map is applied to a virtual sphere and reversed when it is reflected on your object.
- For color reflection maps, the hue affects the tint of the reflection and the brightness determines the amount of reflection. Darker colors result in less reflection; brighter colors result in more reflection.

A custom Reflection map applied to a prop.

To load a custom Reflection map:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Choose the figure you want to edit from the Object popup.
3. Do one of the following:
    - To apply a map to a specific part, choose a part from the Material popup.
    - To apply the map to the entire figure, enable the Texture Changes apply to entire figure checkbox.
4. In the Reflection Map section, click the Load button. An Open dialog appears.
5. Select your custom Reflection map and click Open.

Setting Colors

The color of a figure's "skin" in a rendering is determined by the lighting environment and these surface material factors:

- Object color
- Highlight color
- Ambient color
- Reflective color
- The surface material map

These features apply to both figures and props.

Object Color

The object color is the surface color of the current figure or prop. If there is no Texture map, the object color is the only color of the figure—not considering the effect of colored lights. In a high quality rendering, when a Texture map is loaded, the object color influences the appearance of the Texture map by coloring it. If you don't want the Texture map affected by the object color, set the object color to white (the default color is tan).

To set the object color:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Click the Object Color button. The color picker appears.
3. Choose a surface color for the object and click OK.

You can also set the object color using the Color tool. Refer to "Using the Color Tool" on page 139 for more information on the Color tool.

Texture Maps vs. Object Color

When a Texture map is loaded, the object color is used as a multiplier on the Texture map. What does this mean? The complete answer is rather technical. The result, however, is quite simple. The object color influences the Texture map in a rendering as though some of its pigment was washed over the Texture map image. How much of the pigment depends on the brightness of the object color—the lighter the object color, the less pigment is used. Therefore, when the object color is white, it has no effect on the Texture map whatsoever. When the object color is near black, it obliterates the Texture map; this effect is only apparent in renderings.

Highlight Color

Highlights are bright areas appearing where the light is reflected directly toward the eye—or camera. As Poser renders the figure, it determines where highlights should occur and adds the highlight color to the base color at these points.

In daylight and under most room lights, highlights are white. To complement the lighting environment you've set, select a color similar to your main light.

To select the highlight color:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Click the Highlight Color button. The color picker appears.
3. When you've chosen a color, click OK.
4. To control the size of the highlights, move the Highlight Size slider. The default value is 70%. Higher settings increase the size of the highlight, creating a dull effect. At 100%, the highlights overwhelm the figure. At 20%, the highlights are small, creating a shiny effect. At zero, with the highlight color set to black, no highlights appear

Setting highlight size.

Ambient Color

In Poser, you can set the Ambient color for each figure or object individually. An object's Ambient color is the color it emits equally in all directions. It simulates an ambient (overall room) lighting contribution. Unlike the other color properties, it acts without taking into account any light positions or colors.

The Ambient color mixes with the other lighting properties. Too much ambience flattens the detail of an object, since it looks the same no matter how the surface faces lights. If you want to turn ambient light down or off, set the Ambient color to gray or black. If you want more intense ambient light, set the Ambient color to white or a bright color.

To select the ambient color:

1. Choose **Render menu> Materials**. The Surface Materials dialog appears.
2. Click the Ambient Color button. The color picker dialog appears.
3. When you've chosen a color, click OK.

12

Rendering

How Rendering Works

Rendering is the process of converting the 3D view of your figure into a 2D image. Once you render an image, you can use it in other image-editing applications.

During the course of a Poser project, you'll want to render a number of times to check the progress of your pose, body shape, camera, surface material, or lighting changes.

A rendering in progress.

Renderings show more detail, so you see things in a rendering that aren't otherwise apparent. Based on these results, you'll go back to posing, body shaping, etc., to adjust anything that needs improvement. You'll probably go back and forth—making changes, then rendering to check your changes—several times.

A render mode called *Antialias Preview Render* lets you quickly generate an antialiased image that you can use to check lighting or surface materials. Refer to "Antialias Rendering" on page 263 for more on generating previews.

These "check" renderings are typically displayed in the Document window. You probably won't save them. They're just a by-product of the work process.

Finally, when you've made all the changes you want, you'll generate a high-quality rendering that you *will* save—either by exporting the Document window as an image file or by rendering to a new window. Rendering an animation takes longer, depending on the number of frames it has.

Rendering an animation is similar to rendering an image; however, instead of creating one image, you create several—a separate image for each frame. Render an animation with **Animation menu> Make Movie**. This procedure is covered in "Rendering an Animation" on page 264.

Renderings do not include guides, with the exception of the Ground Plane. If you don't want to show the Ground Plane, hide it before rendering.

Setting Up a Render

The Render Options dialog lets you control the size and attributes of the final output rendering. Render Options include rendered image size, background color, antialiasing, shadows, and whether to apply surface materials, if any have been loaded.

To display the Render Options dialog:

- Choose **Render menu> Render Options**. The Render Options dialog appears.

The Render Options dialog.

Setting Render Destination

By default, renderings appear in the Document window. Poser clears the image from the window as soon as you make an adjustment. This saves on memory and keeps your Desktop from getting cluttered with windows.

If you want renderings to go to a separate window, enable the New Window option. Future renderings of your scene appear in separate windows.

To set the render destination:

1. Choose **Render menu> Render Options**. The Render Options dialog appears.
2. Enable the New Window radio button if you want to open a new window for a rendering. Otherwise, enable the Main Window button and the rendering replaces the image in the Document window.

Setting Image Size

When you render to a new window, you can set the window to any size.

If you've imported a background image, Poser automatically sets the new window to the dimensions of the background. This is handy when you're planning to composite the figure with the background.

To render at a particular size:

1. Choose **Render menu> Render Options**. The Render Options dialog appears.
2. Enable the New Window radio button and enter the size you want.

   You can specify the render size in either pixels or in inches. Use the popup to select the units you want.
3. Enter either the height or the width for the rendering; Poser automatically adjusts the other value to maintain the aspect ratio of the window.

Note

Renderings always use the aspect ratio of the Document window. If you want a different aspect ratio, resize the Document window.

Choosing a Rendering Background

By default, Poser renders to the Document window over the background color or imported background picture. When you render to a new window, you can specify which background is rendered with the window.

To choose a rendering background:

1. Choose **Render menu> Render Options**. The Render Options dialog appears.
2. In the Render Over section, enable one of the three radio buttons. The available options are:

   Background color: The figure is rendered over the current background color. You can change the background using the color icons on the right side of the Document window or using the Color tool.

   Black: The pixels on the edge of the figure are antialiased darker with a black background. This is the best option when you are planning to composite the figure with an image in another application.

   Background Picture: Poser composites the rendering of the scene with the imported background image. This option is available only when you've imported a background image.

   For more information on background pictures, refer to "Pasting Figures onto the Background" on page 43 or "Importing and Exporting" on page 47.

You can render over a background image to add interest.

Setting Surface Detail

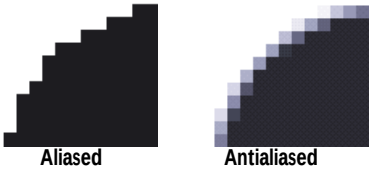
The Surface detail section of the Render Options dialog provides options for rendering features. Disabling these features allows the rendering engine to work more quickly. In the final rendering, however, you'll want all these features turned on.

To set surface detail:

1. Choose **Render menu> Render Options**. The Render Options dialog appears.
2. In the Surface detail section, click one or more of the options provided. The available options are:

   Antialias blends the pixels along the edge of one area with the pixels along the edge

of the adjacent area. This creates a softer, smoother edge.



Choose Antialiased to create a smooth, high quality rendering.

Use Bump Maps and **Use Texture Maps** control whether these surface material features—if currently loaded—are used in the rendering. Transparency and Reflection maps are considered texture maps.

Cast Shadows controls whether Poser renders the light shadows. Shadows increase render time, so you may want to render without them if you're in a hurry.

Rendering an Image

You can render an image using either the Render command or one of the preset rendering options. The Render command uses the options you set in the Render Options dialog to render your image, and should be used to render a final image. The preset rendering options temporarily override the Render Options parameters. They produce lower quality renders you can use to periodically check your work.

Using the Render Command

The Render command uses all the current settings in the Render Options and Surface Material dialogs.

To render a scene:

- Choose **Render menu> Rende**r. A status dialog appears letting you know the status of your render. When completed, a new rendered image appears in either the Document window or a separate window.

Antialias Rendering

The Antialias Document Render command temporarily overrides the features set in the Render Options and Surface Materials dialogs, and creates an antialiased image from the Document window. The image is created using the current display style and lighting. When you click the Document window, the antialiased image is replaced by the current display style.

To make an antialiased rendering:

- Choose **Render Menu> Antialias Document**.

Rendering an Animation

You can make a movie by rendering a Poser animation as a QuickTime or AVI movie file. Poser renders each frame of the animation to a frame in the output movie.

Typically, you'll make a movie several times to check its smoothness and continuity. Each time, you can go back to your animation file and improve the keyframe settings. You can trash your test movies after viewing them.

Finally, when you're satisfied with the entire animation, you'll make the movie at its full resolution and render settings. This is the final product that you'll save and open in a post-production program.

The figures in the final movie are masked in each frame. This makes it easy to composite the movie with other images.

Using the Make Movie Dialog

The Make Movie dialog contains all the controls you'll need to set and render an animation. To make a movie:

1. Make sure the current camera is the one for which the animation was created.
2. Choose **Animation menu> Make Movie**. The Make Movie dialog appears.

Set movie options in the Make Movie dialog.

3. Enter a name in the **Movie** field.

   If you are saving to numbered files, Poser automatically appends 4-digit numbering to the file name.

4. Choose a format for the output movie from the **Sequence Type** popup.
   - For viewing, use QuickTime or AVI. These formats are also suitable for saving a movie for other applications.
   - For exporting to a motion graphics program, you may want to use numbered PICT (Macintosh), BMP or TIF files (Windows). This type of output allows you to save animations without any loss of data.
5. Choose Full, Half, or Quarter from the **Resolution** popup. The smaller the resolution, the faster the rendering, so you may want to use smaller resolutions for test movies.

   Set the dimensions of the full sized frame in the Animation Setup dialog.
6. Choose the current display or render settings from the **Quality** popup.

   If you choose Current Render Settings, verify that they are set as you want them before making the movie. Some options, like antialiasing, increase the rendering time.

7 To turn antialiasing on, enable the **Antialias** checkbox

8 In the **Frame Rate** section, select one of the following options:

- To use the frame rate set in the Animation Setup dialog, enable Use Movie's frame rate.
- To use a new frame rate, enable Use this frame rate, then enter a number. You can use a lower frame rate, which renders faster, for test movies.

Frame Rate does not apply to numbered files.

9 In the **Time Span** section, enter the Start and End time of your rendered animation. This sets the range of frames that are rendered as the final movie.

Poser calculates and displays the number of frames and duration of your selection.

Usually, you'll use the entire set of frames. However, you can select a subset of frames to check a particular motion.

The Time Span display uses the standard SMTPE time code format (Hours: Minutes: Seconds: Frames).

10 Click OK to start the rendering. A Save dialog appears.

11 Choose a save location. If you're saving to numbered files, you may want to create a special folder for them.

12 Click Save to proceed.

If you are saving to numbered files, the rendering begins.

If QuickTime or AVI is the selected sequence type, Poser displays the QuickTime Compression or MS Video Compression options dialog. Choose compression options and click OK. This may take a little while.

Poser renders a frame and displays it in the QuickTime dialog so you can visually check compression quality.

For more information about QuickTime and AVI movie compression options, consult your operating system's User Guide.

Using the Sketch Designer

Poser's Sketch Designer renders scenes in a sketch style drawing. A scene is rendered using a series of black and white or colored brush strokes. You can tailor the strokes to your liking.

The Sketch Designer.

Renderings in the Sketch Designer can be saved and reloaded later. You can also export a sketch as a Painter script to create rendered images using the Painter brush libraries. Finally, you can create amazing animations which emulate traditional sketching techniques.

You can animate sketching techniques with the Sketch Designer.

You'll get the best results from the Sketch Designer when you render a scene with considerable detail (such as hair on a figure) and dramatic lighting.

The Sketch Designer Window

To use the Sketch Designer:

- Choose **Window menu> Sketch Designer**. The Sketch Designer window appears.

The Sketch Designer window

While a sketch is drawing in the window, you can click anywhere on the screen to stop the rendering.

You can customize the controls of the Sketch Designer window to create your own sketch styles, or you can choose from several styles in the Preset Styles popup.

The following sections describe the options that are available for creating a unique Sketch Designer.

Parts of the Scene

You can control the sketch style behavior of three parts of the scene:

- Click Stroke to edit the sketch style of any figures and objects in the scene.
- Click Background to edit the sketch style of the background.
- Click Edge to edit the sketch style of any figures and objects' edges.

Sliders

You can customize your sketch with the slider controls. The sliders determine many characteristics of stroke lines. As you adjust each slider the sketch is redrawn, so you can see your results in real time.

Density controls the density of lines in the sketch.

Line Length defines the length of strokes.

Min Width defines the width of the edge of each stroke. This control affects the brightness of the original image.

Max Width defines the width of the center of each stroke. This control affects the brightness of the original image.

Lo Brightness determines the band of tone. A lower setting means lines are drawn only in the darkest parts of the scene. If the Over Black option is *disabled*, set this control to zero for the best results.

Hi Brightness determines the band of tone. A lower setting means lines are drawn only in the darkest parts of the scene. If the Over Black option is *enabled*, this control should be at 1, for best results.

Stroke Head determines the amount each stroke tapers at its head.

Stroke Tail determines the amount each stroke tapers at its tail.

Line Random a higher value randomizes the shape of the lines

Color Random a higher value randomizes the color of the lines

Opacity determines the clarity of lines. Lower values create more transparent strokes.

Cross Hatch controls the frequency of cross hatching in the strokes.

Total Angle determines the amount of angle change that the whole stroke can go around before it stops drawing the stroke. A higher value makes an image darker. When you set Density at a small value, set Total Angle at a smaller value.

Color Cutoff determines the threshold of color change allowed for a stroke. Use this slider in conjunction with Total Angle.

Light 1, 2, 3 determine how much each of the first three studio lights contributes to the direction of the strokes. A high value results in strokes going in the direction of the light.

BG Direction defines the direction of the background strokes.

Auto Spacing If Auto Density is enabled, this slider controls the amount of space between strokes

Color Blend controls the amount of color in the document window to be blended into the sketch.

Textured Brushes

You can choose between several texture brushes in the Sketch Designer window. The choices are Sharp, Bristles, Very Soft, Soft, Less Soft, and Slanted. You'll find the effects of these brushes is most visible when you set the Min Width and Max Width sliders to higher values.

Sketch Designer Options

The checkbox options available in the Sketch Designer window are:

Over Black When enabled, the background is black and strokes are white. When disabled, the background is white, and strokes are black or colored.

Auto Density When enabled, the render reaches an automatic density based on the original image, and the Density slider setting is ignored. When this is disabled, use the Density slider.

Colored Strokes When enabled, figures and objects are rendered in color. When disabled, no colors appear.

Working with Completed Sketches

Once you create a sketch, you can save it to and delete it from the Preset Styles popup. In addition, you can export your sketches to Painter scripts.

To save a sketch:

1. Choose Create Preset from the Preset Styles popup.
2. Enter a name for your sketch. Poser automatically attaches a .pzs suffix to the filename.

To delete a sketch:

- Choose Delete Preset from the Preset Styles popup.

To export a sketch to a Painter script:

1. In the Sketch Designer, render the scene to your liking.
2. Choose **File menu> Export> Painter Script**.
3. Choose a save location and name the file.

Rendering a Sketch

After setting up a sketch, you can render it so that the sketch appears in your document window. You'll find this feature useful if you want to export a movie in sketch style.

To render a sketch in the Document window:

- Choose **Render menu> Sketch Style Render**.


WITH ONE TOUCH, THE MILD MANNERED DUO BECOME DIMENSIONAL POWERHOUSES.
MetaCreations
POSER 4
FOOLS! DID YOU THINK I WOULD BE BEATEN SO EASILY.
HERE FIEND, FEEL THE POWER OF THREE DIMENSIONS.
ZAP

13

Advanced Body Shaping

Besides the basic shaping tools discussed in Chapter 5 , “Body Shaping,” you can also customize the shape of figures using custom morph targets and the Joint Parameters palettes.

Creating Custom Morph Targets

As discussed in "Using Morph Targets" on page 152, morph targets are transitional changes in the geometry of a figure that can be animated over time. Poser now includes a library of morph targets, and you can build your own morph targets in Poser as well.

In this section, you'll learn how to build custom morph targets in other 3D modeling applications.

A morph target is a custom Parameter that is added to a body part so you can gradually reshape it. A figure's geometry can move from the original shape of the model to the geometry of the morph target. During the course of an animation, the model begins to change shape until it reaches the morph target geometry.

A Morph Target used to alter figure geometry.

Setting up Morph Targets

Morph targets are assigned to individual body parts. When you set up a Morph Target, a new Parameters Dial is added to the body part. The Parameter Dial lets you control the amount of morphing applied to the body part.

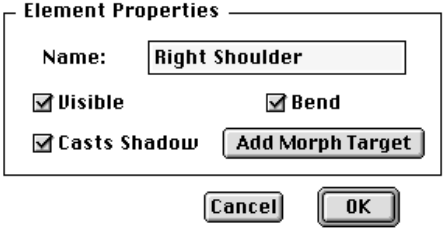
To add a morph target, you create a morph target geometry that represents the end-point of the morphing. The morph target geometry must contain the same number of vertices as the original body part, so it's best to use the original body part as a starting point.

A Morph Target geometry can be created in any 3D modeling application that saves files in Wavefront (OBJ) format. The tutorial later in this chapter uses Ray Dream Studio 5 to create a Morph Target geometry. However, you don't have to use Ray Dream Studio; any application where you can edit geometries and save files in OBJ format will work

To add a custom Morph Target:

1 Select the body part to which you want to add a morph target.

Choose **Object menu> Properties**. The Properties dialog appears.



Element Properties dialog.

2 Click Add Morph Target.

The Add Target dialog appears.

Add Shape Interpolation Target dialog.

3 Click Locate to find the geometry file you want to use as a morph target. The file must meet all the following requirements:

- File must be in OBJ format.
- File must contain the same number of vertices as the original body part.
- File must contain only the body part you are morphing. Do not use a file of the entire figure.

The filename appears in the Geometry field.

4 Enter a name. The name appears on the morph target Parameter Dial for the selected body part.

5 Click OK to return to the Element Properties dialog. Click OK again to return to the main window.

A new Parameter Dial is added for the selected body part. Use this dial to morph the body part from its original shape to the morph target. A value of 0.0 for this dial is the original object. A value of 1.0 changes the body part to the morph target.

Morph Target Tutorial

This tutorial uses Ray Dream Studio 5 to create a Morph Target for the head of a figure. You'll make the nose grow like Pinocchio's.

Note

Important: For this tutorial to work correctly, you must have installed the new OBJ import/export plug-in and mesh form modeler for Ray Dream Studio 5.0.2, which is included with Poser 4.

Lesson 1: Setting Up

To load a figure geometry into Ray Dream Studio 5:

1 Launch Ray Dream Studio 5.

2 Choose **File menu> Open**.

3 In the Open dialog that appears, click the Format popup and choose Wavefront.

4 Select the folder **Poser 4: Runtime: Geometries: newMaleCasHi**.

5 Select the file newMaleCasHi.obj and click Open.

6 Use the default settings for the OBJ import dialog and click OK.

The figure loads into the perspective view and into the timeline with the name lFoot.

The newMaleCasHi geometry, as shown in the Perspective window.

To edit the figure's geometry:

1. Select the figure newMaleCasHi in the Timeline.
2. Click to select the figure in the perspective window, then choose **Edit menu> Jump In**.

The newMaleCasHi geometry, shown in the mesh form modeler.

3. Click the Selection tool.

4. Click away from the object to make sure there are no vertices selected.
5. Double-click in the figure's head.

   The entire head is selected. This may take a while.

The newMaleCasHi figure with head selected.

6. With the head selected, choose **Selection menu> Invert** to select everything but the head.

7 Press the delete key.

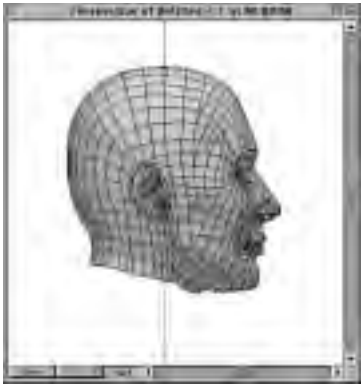
The body is deleted.

8 Click the Zoom tool.

9 Drag a marquee around the head.

Enlarged view of the head.

10 To switch to the left view, choose **View menu> Preset Position> Left.** This makes the model easier to deform.



Left view of head.

Lesson 2: Creating the Morph Target

To deform the geometry:

1 Click the Sphere of Attraction tool.

The default size, 4 inches, is too large for Poser figures. Compared to standard Ray Dream Studio units, Poser figures are very small. However, do not change the geometry size other than in the manner you want to morph it.

If, for example, you increase the size of the entire head, the size increase is included in the morph target. This is also true of the position relative to the center. In some cases, that may be the effect you

are seeking. In this case, however, you just want to increase the size of the nose.

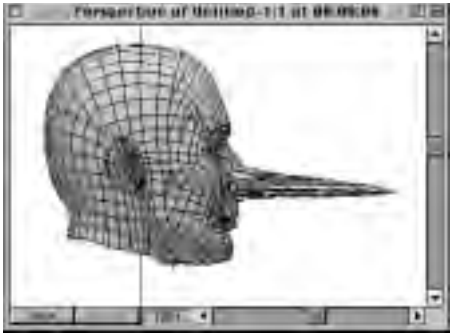
2 If the Properties palette is not already open, choose **Windows menu> Properties**.

The Properties palette.

3 Change Radius of Sphere unit setting from inches to millimeters.

4 Change the Radius of Sphere value to 1 millimeter.

5 Click on the tip of the nose and drag to the right. You have now created a morph target.



The deformed newMaleCasHi head.

6 Click the Done button in the lower-left corner of the window.

To save the new morph target file:

1 Choose **File menu> Save As**.

The Save As dialog appears.

2 In the Format popup, choose Wavefront.

3 Change the name to nosemorph.obj and save the file in the same folder as the original, newMaleCasHi.

4 Click OK.

A dialog appears warning you that saving out of Ray Dream Studio format may result in loss of information.

5 Click OK to continue.

6 Choose **File menu> Close** to exit Ray Dream Studio.

Lesson 3: Using the Target in Poser

To add a morph target in Poser:

1. Launch Poser.
2. From the Figures category of the Libraries palette, choose the People sub-category, if it's not already selected.

The People sub-category.

3. Double-click the Casual Man preview.

   The figure appears in the Document window.

The Casual Man in the Document window.

4. Click the Face Camera icon in the Camera Controls.

The Face Camera icon.

5. Select the Head, and choose **Object menu> Load Morph Target**.
6. In the Add Target dialog that appears, locate and open the file **Poser: Runtime: Geometries: newMaleCasHi: nosemorph.obj**.
7. Enter "Nose" in the label field. This assigns the name "Nose" to the new Parameter Dial.
8. Click OK.

9 Use the rotation trackball to rotate the view slightly to the left or right.

A rotated view of the figure.

10 Click to select the Head.

11 Drag the Nose Parameter Dial to the right toward 1.0.

The morphed Nose.

Your morph target is complete.

Figure Joints and Blend Zones

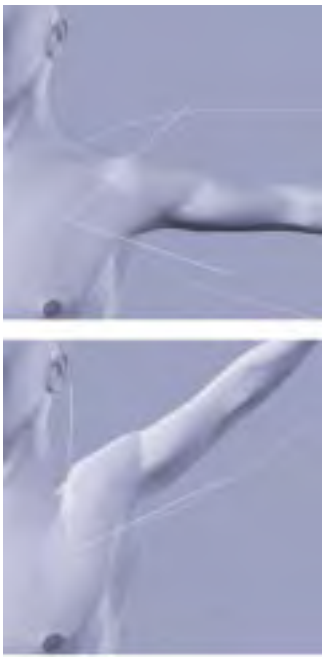
The joints on a figure control how parts bend, blend, twist, and bulge. Realistic movement in a figure is controlled by joint settings. For example, a human knee joint can't bend forward.

An example of figure joints.

A figure's bending and twisting motion is created using transformers. Transformers stretch, skew, or scale polygons in the transformation zones to produce desired joint motion.

The transformation zone is defined by the inclusion and exclusion angles assigned to each transformation. Polygons in the exclusion angle are not affected by a transformation, while polygons in the

inclusion angle are affected. In the area between the angles, or *blend zone*, polygons are adjusted to create a smooth transition between the surrounding polygons.



An example of blend zones.

Joints are controlled using the Joint Parameters palette. Blend zones are edited each time you adjust the transformation inclusion and exclusion angles. Blend zones can be further refined using Spherical Falloff zones.

Editing Joint Parameters

The Joint Parameters palette lets you control both joints and blend zones. You can directly manipulate joints and blend transformers to set how a joint works. These advanced settings can be used to:

- Fine tune the bending of existing figures to suit your needs
- Create new types of effects, such as imitating 'Mr. Fantastic' from the Fantastic Four comics
- Customize joints and transformers for creating your own new figures

Refer to "Creating Custom Figures" on page 301 for more information on creating Poser figures.

Each joint on a figure has a set of attributes, like Bend, Twist, or Side-to-side. The attributes available for editing depend upon which joint is selected. Editable attributes are displayed in the popup at the top of the palette.

To edit a joint's parameters, you first select a joint attribute and then set each of its parameters. Each attribute has a specific set of parameters that control how the attribute affects the joint. For example, the parameters for the Center attribute let you control the exact position of the center point.

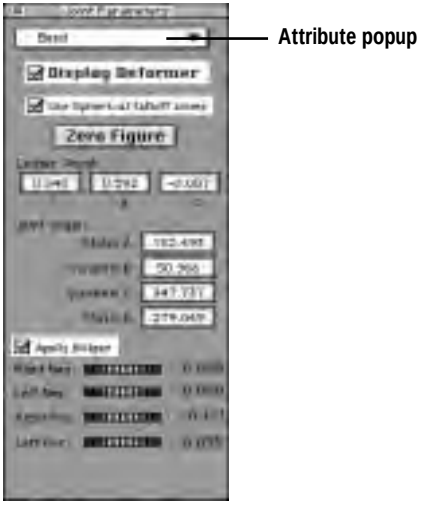
Note

Before making any changes to a Joint Parameter, turn all IK Chains off. It is also easier to see some attributes, such as the center, if you view them in outline or wireframe display mode. If your computer is fast enough, use Full Tracking to see the results of your changes in real-time.

To display the Joint Parameters palette:

- Choose **Window menu> Joint Editor**.

  The controls available on the Joint Parameters palette depend on the currently selected body part or prop.



The Joint Parameters palette.

To edit a joint parameter:

1. Select a body part.
2. Display the Joint Parameters palette.
3. Select an attribute from the popup at the top of the palette.
4. Set the attribute's parameters.

Using the Joint Parameters Palette

The Joint Parameters palette contains several controls to set attributes for a joint. Although the controls change for different body parts, the controls common to all body parts are:

Display Deformer: Toggles the graphical display of the joint on a figure.

Zero Figure: Resets to 0 the rotation (Bend, Twist, Side-Side, Front-Back) for all body parts.

Use Spherical Falloff Zones: Toggles on or off the Spherical Falloff Zones on a figure. Refer to "Spherical Falloff Zones" on page 287 for more on falloff zones. The Use Spherical Falloff Zones control appears on all attributes except the Center attribute.

Interactively Editing Joint Parameters

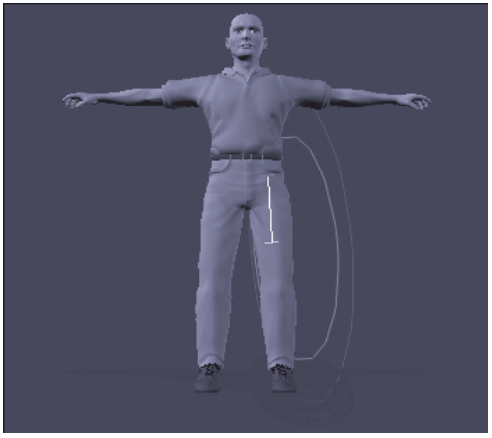
When you select a joint attribute from the popup in the Joint Parameters palette, a graphical representation of the parameter appears on a figure. For example, when you select the Twist attribute for the leg, a red and green line appears on the leg.

Center

A body part's center becomes the outline of the selected target when you can edit it.

Twist

When you select the Twist attribute, a line with two handles appears on the figure. The red handle represents the starting point of the twist transformation area, and the green handle represents the end. Dragging these handles increases or decreases the Twist area.



A Twist attribute displayed graphically on the figure.

Editing Inclusion and Exclusion Angles

When using Bend or Side-Side/Front-Back, the red lines represent the exclusion angle, while the green lines represent the inclusion angle.

Polygons in the exclusion angle are not affected by a transformation. Polygons in the inclusion angle are affected by the transformation. The area between the inclusion and exclusion angles is the Blend zone.

To edit inclusion and exclusion angles:

1. Move the cursor to an end point of the exclusion or inclusion angles until the cursor changes to a target symbol.
2. Drag the angle. If you're using full tracking, the effects of your change are shown as you drag.

Inclusion and exclusion angles exist in three dimensions, so you can rotate a figure to see all the areas affected by the transformation. You can also edit angles in all three dimensions.

To make sure you're moving an angle in only one dimension, use the orthogonal cameras. For example, using the From Front camera, moving left and right moves in x. Moving up and down moves in y. With the From Left view, left and right move in z, and up and down move in y.

Bend

To adjust the Bend transformation area, drag the end-points of the red or green angle. To change the center of the body part, drag the center point target.

Side-Side/Front-Back

Like the Bend attribute, both the Side-Side and Front-Back attributes are edited by dragging the inclusion and exclusion angle lines.

Joint Attributes

Each joint on a body part has a number of parameters that together control how the joint moves.

Center

The Center Attribute sets the center of rotation for a selected body part. This attribute is available for all body parts and props.

The Center attribute.

The parameters of the Center attribute are:

Center Point: Sets the XYZ position of the center of the body part. 0,0,0 is located in the center of the body on the floor.

Orientation: Sets the XYZ rotation of the axis. Click and drag a dial to rotate the axis. Option/Alt-click a dial to reset it to 0.

Align: Aligns the axis to the rotation of the body part.

Twist

The Twist attribute alters the location of the twist transformer for each body part. The intensity of the transformation is controlled using the Twist Parameter Dial or Twist tool.

The Twist Attribute.

There is not a Twist attribute for the hip, since it is the parent of the entire figure. Twisting the parent is the same as rotating the entire figure. When IK is enabled, twisting the hip transforms body parts included in the IK chains.

By default, the Twist axis runs lengthwise down the center of each body part. For example, for arms, the twist axis is the x-axis, while for legs the twist axis is the y-axis. Moving and rotating the center of a body part can alter the position of this axis.

The Twist axes on the body.

The parameters of the Twist attribute are:

Twist Start, Twist End: Sets the start and end of a twist area on a body part. Only the body parts in the twist area are affected by the twist transformation.

Twist areas can be made larger than the body part to make a twisting motion appear more natural. In most cases, you want to include the body part's parent.

Bend

The parameters for the Bend attribute alter the angles of the bend transformers and define how bulges are created.

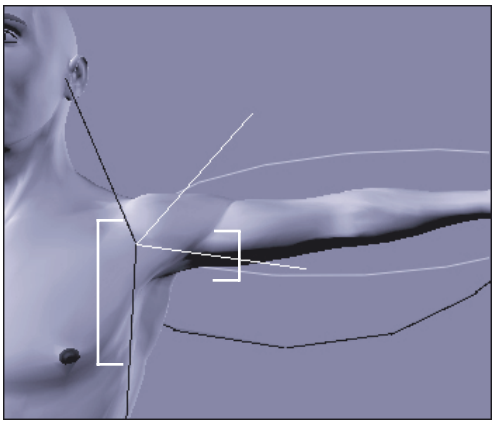
The Bend attribute.

The parameters of the Bend attribute are:

Center Point: Sets the XYZ position of the center of the body part. Bending occurs at the center point. Changing that point changes the center of the body part.

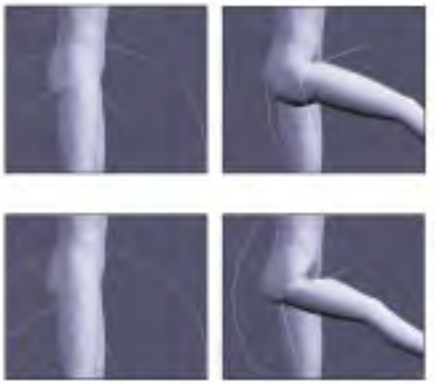
Joint Angles: Set inclusion and exclusion angles for the Bending transformation. The values in Static A and D together set the exclusion angle. Polygons in the exclusion

angle are not affected by the bending. The values in Dynamic B and C together set the area of inclusion. Polygons in the inclusion angle are affected by the bending.



The angles of inclusion and exclusion on a body part.

Apply Bulges: When enabled, these parameters control how polygons in the bend zone are stretched or pinched to create bulges or wrinkles. Right and Left dials refer to the sides of the figure. Neg and Pos dials refer to negative or positive values for the rotation of the attribute (for example, a positive value for the Bend attribute creates bulges as set by the Right and Left positive bulge dials). Option/Alt-click these dials to reset them to 0.



Differences in bulges and wrinkles when the body part center is changed.

Side-Side/Front-Back

The parameters for the Side-Side/Front-Back attributes control angles of the Side-Side/Front-Back transformers and define how bulges are created.

The Side-Side attribute.

The Front-Back attribute.

The Side-Side/Front-Back attributes have the following parameters:

Center Point: Sets the XYZ position of the center of the body part. Side-Side transformations occurs at the center point.

Joint Angles: Set inclusion and exclusion angles for the Side-Side transformation.

Apply Bulge: When enabled, these parameters control how polygons in the Side-Side transformation zone are stretched or pinched to create bulges or wrinkles.

Scaling

Each body part has parameters that let you scale the parent and child body parts. The settings are similar to the Twist parameters, and follow the Twist axis of the child or parent body part.

For example, the Right Collar of the Business Man has scaling controls for the chest (the parent body part) along the y-axis, and scaling controls for the Right Shoulder (the child body part) along the x-axis.

The Scaling attribute.

High End/Start, Low Start/End: The High and Low parameters define a blending area. For example, when scaling the head you may also want the top of the neck to scale.

When setting this parameter, only one pair of settings—the high or the low setting—is relevant. The unused parameter pair is automatically set to an out-of-limit number

(such as 100.000 or 99.000). This indicates that the pair is not relevant to the area you have selected for blending. The out-of-limit settings should not be edited.

The effects of High/Low scaling.

The end of each blending zone is represented in red, while the start is represented in green. The effects can be uniform, or can be controlled by spherical falloff zones. Refer to "Spherical Falloff Zones" on page 287 for more information.

Copying Joint Parameters

You can copy joint parameters from one half of a figure to the other using the Symmetry command.

To copy joint parameters:

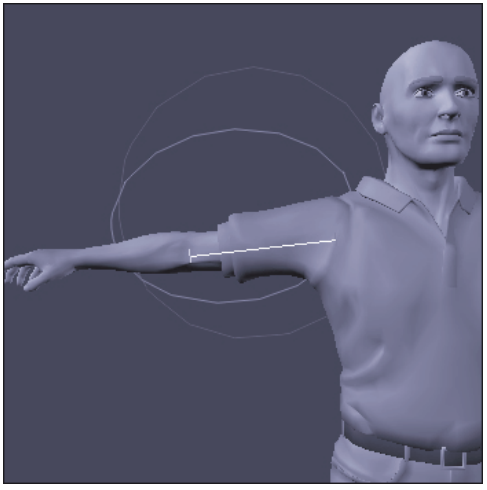
1. Choose **Figure menu> Symmetry>** *choose an option*. A dialog appears asking if you want to copy the joint zone's setup also.
2. Click Yes to include joint parameters.

Saving Joint Parameters

Changes to joint parameters affect only the current scene. To save joint parameter changes, you must either save your scene, or save the figure in the Libraries palette. Refer to "Saving to the Libraries Palette" on page 34 for details on saving figures to the Libraries palette.

Spherical Falloff Zones

Spherical Falloff Zones are an advanced method for controlling blending between body parts. Two spheres, a green "inner" sphere and a red "outer" sphere represent the falloff zones.



Spherical Falloff Zones.

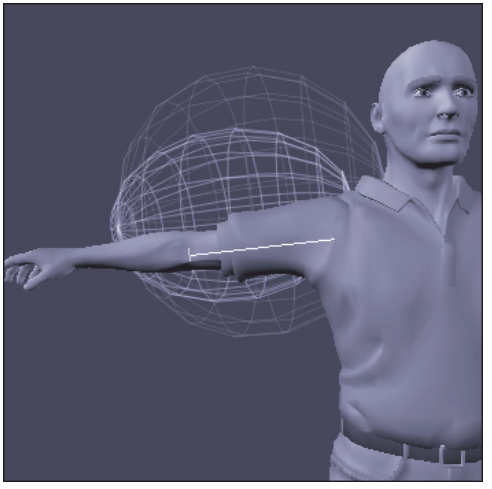
The green sphere defines the area that is 100% affected by the transformation. The red sphere represents the boundary of the transformer's effect. The area between the inner and outer sphere is the "blending" zone. The effects of the transformation gradually decrease from 100% at the boundary of the inner sphere to 0% at the boundary of the outer sphere.

When adding Spherical Falloff Zones, the default position of the sphere is 0,0,0.

Displaying Spherical Falloff Zones

Spherical Falloff Zones can be selected and displayed using any display mode. To change the display mode for a sphere, select Element Styles from the Display menu, then select a mode. The default display mode for these spheres is outline.

Wireframe mode lets you view the spheres in 3D and still see the body parts they surround.



A Spherical Falloff Zone viewed in Wireframe mode.

Editing Spherical Falloff Zones

Spherical Falloff zones can be edited using any of the Edit tools. You can reposition, scale, rotate, or twist Spherical Falloff zones.

14

Hierarchies

How Hierarchies Work

In order to display a figure in the Workspace, Poser must interpret information about the figure's geometry and body part parameters. This information allows Poser to create bendable joints between parent and child objects.

A scene's hierarchy describes the parent-child relationships of all objects in the scene. Body parts or props that are physically located at a seam are generally contained either in a parent object or a child object. Data like rotation order and IK relationships are also defined in the scene's hierarchy.

A Poser document hierarchy contains:

- A list of everything in the scene's universe, including figures, body parts, props, lights, and cameras

- Hierarchical connections (parent-child relationships) for scene objects
- Parameters, including rotation, translation, Morph Targets, and Point At parameters.
- Any Inverse Kinematics (IK) chains of a figure

In Poser 4, you can work directly with a scene's Hierarchy. The Hierarchy Editor displays everything in your Poser scene—all the figures, lights, cameras, and props currently in the studio.

With the Hierarchy Editor, you can:

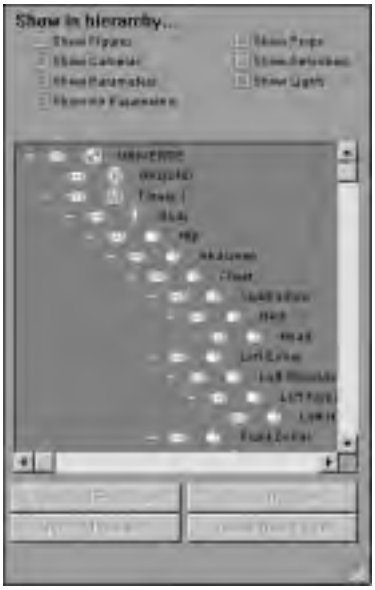
- Select elements in your scene. When you select an item in the Hierarchy Editor, it is selected in the Document Window, Objects List, and Graph Palette.
- Double-click on an object to bring up its Object Properties.
- Set element visibility. Quickly hide body parts, props, or deformers.
- Rename or delete elements and parameters such as morph targets or Point At parameters.
- Set up or change parent-child relationships for props.
- Set up Inverse Kinematics (IK) chains.
- Change rotation order for props or body parts.
- Create new figures. Refer to "Creating Custom Figures" on page 301 for more information.

Using the Hierarchy Editor

The Hierarchy Editor displays a hierarchical listing of everything in your Poser document's universe. You can contract this list to show only the parent elements in your scene, expanded elements to show their children, and expand objects to display their parameters. Depending upon what you want to select or modify, you can display it in the Hierarchy Editor.

To display the Hierarchy Editor:

- Choose **Window menu> Hierarchy Editor**. The Hierarchy Editor appears.



Using the Hierarchy Editor, you can easily expand/collapse scene elements.

Controlling what is Displayed

You can control what displays in the Hierarchy Editor by selecting display options at the top of the Editor. Options indicate what type of scene objects are in the hierarchy view. When the Hierarchy Editor first opens, a default set of options are checked.

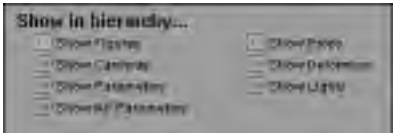
To set the Hierarchy Editor display:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Click a display option to display or not display certain scene elements.

   An X appears in the box beside a selected display option.

   Display options are:

   - **Show Figures**: display all figures in the document
   - **Show Cameras**: display all cameras
   - **Show Parameters**: display object parameters
   - **Show All Parameters**: display all parameters, as well as a few special scene level elements, like inner and outer scene boundaries
   - **Show Props**: display all props in the scene, including the ground plane
   - **Show Deformers**: display Magnets, waves, and Morph Targets
   - **Show Lights**: show all lights in the scene



Use the display options at the top of the Hierarchy Editor to control what is displayed.

Collapsing the Hierarchy Editor

Scenes contain scene elements, including body parts, props, deformers, cameras, and lights. This can make for a very long Hierarchy Editor listing. You can collapse elements in the list to save space or expand them to show more detail. When not working with a particular figure, you can collapse its listing. This shortens the Hierarchy Editor list and makes other objects easier to locate.

To collapse/expand a listing:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Click the minus icon next to an object to collapse it. The icon changes to a plus when the element is collapsed.
3. Click the plus icon next to an object to expand it. The icon changes to a minus when the element is expanded.

Selecting Objects

You can select an object in the Hierarchy Editor. Selecting an object here is equivalent to selecting it in the Document Window, choosing it in the Current Element pop-up at the bottom of the Document window, or selecting it in the Graph or Animation palette.

To select an object in the Hierarchy Editor:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Click the object you wish to select.

   As you select an object, notice that it is now also selected in the Document Window.

Click on an object to select it.

Deleting Objects

You can delete figures, props, and lights in the Hierarchy Editor. You cannot delete Poser figure body parts, cameras, or the ground.

You can delete Morph Targets and Point At parameters in the Hierarchy Editor. You cannot delete other object parameters.

To delete objects in the Hierarchy Editor:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select the object you want to delete.

Note

You cannot delete just a body part. If you select and delete a body part, it deletes the entire figure, just as it would in the Document Window.

3. Press the Delete/del key to delete that object.

To delete a group of objects in the Hierarchy Editor:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select the objects you want to delete.

Renaming Objects

You can rename objects, making it easier to identify specific body parts and props.

To rename an object:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Double-click on the name of the object that you want to rename.
3. Type in a new name for the object.

Reordering Objects

Figures

You can reorder props and Deformers in the Hierarchy Editor. Reordering Deformers can be useful, especially when they appear at the bottom of the Hierarchy listing. You cannot establish new parent-child relationships for Poser figure body parts.

You can reorder morph targets and rotation parameters (yrotate, zrotate, xrotate) for figure body parts. Rotation order affects how a body part twists or bends. By default, Twist is the top rotate parameter.

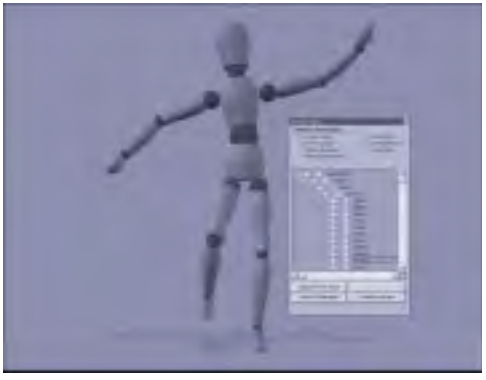
Note

Be extra careful should you decide to change rotation order, because you can get unexpected results.

Props, Deformers, Lights, and Cameras

You can move Deformers and Morph Targets in the Hierarchy Editor.

You can reorder prop rotation parameters. Rotation order affects how a prop twists or bends. You can also do translations for props. Because the order in which rotation parameters are interpreted is important, be careful should you decide to reorder them.



Rotation parameter order affects how figure body parts twist and bend.

You can reorder prop, light, or camera Point At parameters. These parameters also appear at the bottom of the Hierarchy Editor list.

Displaying Object Properties

You bring up the properties dialog for an object right from the Hierarchy Editor. Accessing object properties from the Hierarchy Editor can be a real time saver.

To bring up the properties dialog from the Hierarchy Editor:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Double-click an object in the Hierarchy Editor listing to display its Object Properties.

Double-click on an object to display Object Properties for that object.

Changing Object Visibility

You can change object visibility in the Hierarchy Editor. When you change object visibility in the Hierarchy Editor, it's the same as changing it in the Object Properties dialog for that object.

Changing object visibility right in the Hierarchy Editor can also be a great time saver. It's a great way to hide Magnet Deformers from view while you inspect the results of the Deformer. Changing object visibility is also a fast way to hide body parts. For example, when you load Poser 4 clothing into a scene, it may be necessary to hide some body parts so that they don't show through the clothing. This is especially true for tight-fitting clothing. With the Hierarchy Editor, you can quickly make body parts invisible.

To change object visibility:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Click the Eye icon next to the object to toggle visibility on and off. When the Eye is grey, the object is invisible.

To change visibility for a group of objects:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Press Opt/Alt while you click the Visibility Eye for an object. This turns

visibility on/off for that item and all its children objects.

Opt/Alt click the Visibility Eye for an object to reset visibility for that object and all objects indented under it in the Hierarchy Editor list.

Establishing Hierarchical Relationships

A figure in Poser 4 is essentially a 3D model that has separate parts for each moving body part. What makes a Poser model unique is how it interacts with the controls in Poser. A 3D model in Poser has joints that move realistically, as in a real person.

Poser mirrors real body movement by adding joint parameters to each body part. This allows you to manipulate the figure based on those parameters. You can then create realistic motion, using Parameters Dials or the Walk Designer.

Note

You see changes in child/parent relationships when IK is On verses when IK is Off.

You can change parent-child relationships between the figures you've created and set up parent-child relationships for props. You cannot, however, reorder or change parent-child relationships for Poser figures. Refer to "Creating Custom Figures" on page 301 for more about creating new figures. Refer to "Establishing Hierarchical Relationships" on page 295 for more about setting up parent-child relationships.

When you bring a geometry into Poser, the Hierarchy Editor displays a Universe, followed by a list of props. Scene hierarchy relates what should move with what, i.e., children move when their parent moves.

When you create a figure from the geometry, Poser uses hierarchy information, to create joints necessary for figure posing. Unless the figure was created using standard body group names, you'll have to manually establish parent-child relationships and establish a hierarchy order. Refer to "Applying the Standard Hierarchy" on page 299 for more about applying the Standard Hierarchy to figures created with standard group names.

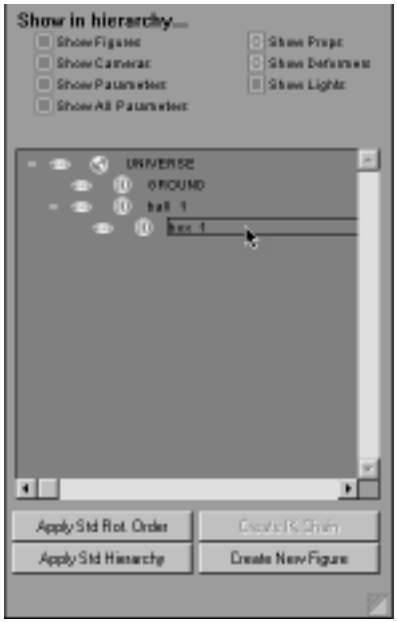
To create a parent-child relationship:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Drag the intended child prop onto the root object, that is, the intended parent.

   A white box highlight surrounds a valid parent object when the child object is correctly positioned on top of it. In addition, the mouse cursor indicates when it is OK to drop an object.

A box highlight surrounds the intended parent object when the child object is correctly positioned.

3. Release the child object when the box highlights the intended parent object.



The Hierarchy Editor after dropping the child object onto the intended parent object.

To reorder objects at the same hierarchical level:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select the prop object you want to reorder.
3. Drag the object to the desired level.

A line is displays immediately before/after the target object, indicating where the object will be inserted.

A line is displayed immediately before/after the target object, indicating where the object will be inserted when dropped.

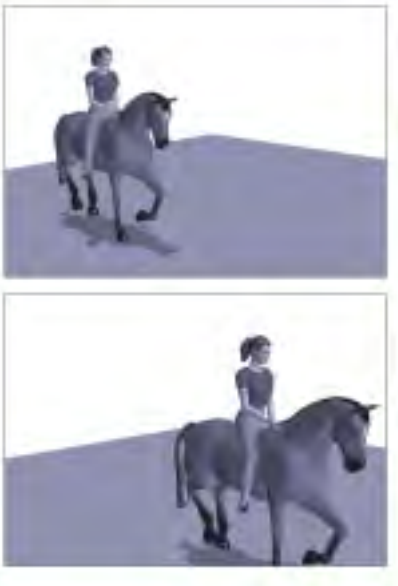
4 Release the object to insert it in its new position.

After moving an object to the same hierarchical level as the target object.

Creating Multi-Figure Hierarchies

When posing more than one figure, you may want to tie the movement of one figure to another figure. You accomplish this by setting up a parent-child relationship.

For example, if you pose a female figure on a horse, you can make the female figure a child of the horse. This way, when the horse (the parent) moves, so does the female figure (the child).



Set up a parent-child relationship so figures can be posed together.

You can attach the child to the entire parent figure or to just a portion of it. Continuing with the example, you can make the female figure a child of the whole horse or just the horse's abdomen.

Once a parent-child relationship is set up, any rotation, translation, or twisting performed on the parent figure also applies to the child figure or prop.

To set up a multi-figure relationship in the Hierarchy Editor

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select the figure you want to use as the child.
3. Drag the body of the child figure onto the intended parent. A box highlight indicates a valid drop location.

To set up a multi-figure relationship outside the Hierarchy Editor:

1. Click the Current Figure pop-up beneath the Document window and choose the figure you want to use as the child.
2. Click the Current Element pop-up and choose Body to select the entire figure.
3. Choose **Figure menu> Set Figure Parent**. The Set Parent dialog appears.
4. Select the body part from the hierarchy selection in the Set Figure Parent dialog.
5. Click OK to close the dialog.

Applying the Standard Hierarchy

It doesn't matter how you create the geometry for a new figure. You can create it in Poser by grouping and saving groups as new Poser props. You can create individual figure parts in another software application and join them together in the Hierarchy Editor.

Regardless of how the geometry was created, when you introduce it into Poser, the Hierarchy Editor displays a Universe, followed by a list of props or a single prop with groups.

If, however, you created your figure geometry using standard body group names for human/bi-ped figures, you can use the Hierarchy Editor to automatically apply the Poser Standard Hierarchy to your figure. Applying the Standard Hierarchy establishes parent-child hierarchy in one pass. Poser can apply the Standard Hierarchy to full or partial figures. Refer to "Naming Groups" on page 306 for more about creating figures with standard body group names.

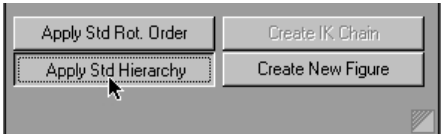
To apply the Poser Standard Hierarchy to a figure:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select the Universe.

Note

The Apply Standard Hierarchy button is not available unless the universe is selected.

3. Click the Apply Standard Hierarchy button.



Using the Apply Standard Hierarchy button in the Hierarchy Editor automatically maps the parent-child relationships for your figure.

Applying Standard Rotation Order

If the props for human/bi-ped figures use standard body part names, Poser can automatically apply the standard rotation settings for each prop.

To apply standard rotation to a figure:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select Universe.
3. Click the Apply Standard Rotation Order button to apply the standard Poser rotation settings to body parts.

Setting Inverse Kinematics

Kinematics is the study of motion, velocity, rotation, and position. In terms of jointed structures, like an arm or leg, forward kinematics calculates how actions at the root of the structure affect the position and

rotation of those at the end. For example, when you raise your arm, your hand automatically moves to a new position and rotation.

Inverse Kinematics (IK) uses the same kind of dependency, but in reverse. The extremity moves, and IK determines how the objects joined to it (closer to the root) responds to support the new placement. For example, if someone was to grab your hand and push, your arm would automatically bend at the elbow, while your shoulder would stay fixed in position.

Poser supports IK for any limb. When IK is on, you can translate the hands and feet and achieve appropriate arm and leg positions automatically. In Poser 4, you can create and delete new IK chains, using the Hierarchy Editor.

Note

It might be helpful to turn Inverse Kinematics Off for all existing chains before setting up IK chains in the Hierarchy Editor.

To turn IK off for a chain:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Uncheck the IK On/Off checkbox to turn IK off for that chain.

   You can also turn IK Off with the **Figure menu> Use Inverse Kinematics** command.

To create an IK chain:

1. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
2. Select IK chains, to enable the Create New IK Chain button.
3. Click the Create New IK Chain button.
4. Enter a name for the new IK Chain.

   A blank IK chain is added to the figure's IK chains.
5. Drag individual body parts from the figure you're creating onto the new blank IK chain.
6. Add nodes to the IK chain in the order of root to goal, the goal being the terminating node. For example, in the arm IK chain, the hand is the chain's goal.

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Creating Custom Figures

Almost any geometry made up of polygons can be used as a figure in Poser. When you create a figure, its appearance has no effect on how it functions in Poser. It doesn't even have to look human.

You can create your own Poser figures, using a variety of techniques. You can:

- Modify existing figures, then save them to the Figure Library
- Combine multiple existing figures into a new one.
- Combine props created with the Grouping tool that you've stored in the Props Library
- Create figure geometry in a 3D software application, like MetaCreations Ray Dream Studio, then use the Hierarchy Editor to set up figure Hierarchy information.

- Create figure geometry in a 3D software application, like MetaCreations Ray Dream Studio, then manually create a Hierarchy file.

Modifying Existing Figures

Starting with an existing Poser figure, you can make changes to it, then save it to the Library. Refer to "Body Shaping" on page 137 for more about modifying figures.

You can:

- Adjust proportions to create any type of body, from lifelike to the absurd.
- Shape individual parts to significantly change body appearance. Give the model a big belly. Give the model a broad face. Makes a figure taller. Make a figure stout—even rotund.

You can create exaggerated body types.

- Customize figures by replacing body parts with props you import into your scene. You can also attach a prop to a figure, such as a sword or a pair of wings.
- Modify figure height.
- Change a figure or clothing color.
- Use Poser's deformer tools to shape body parts and figures into new and interesting forms. Stretch a figure's nose. Make a figure's belly bounce as it walks. Add ripples to clothing.

You can create exaggerated body types.

- Use morph targets to add ethnic traits to your figures. (Poser even includes a full figure morph target for morphing figures into superhero form.)

Once you modify an existing Poser figure, you can create a customized figure in the Library palette. Because body parts and their relationships are cloned from standard Poser figures, Poser automatically creates the joints necessary for the new figure to operate correctly in the Poser workspace. Refer to "Saving Poses" on page 135 for how to save to and use figures from the Library palette.

Combining Multiple Figures

Starting with an existing Poser figure, you can make changes, then save parts of that modified figure in the Library. For example, you can save several types of heads, arms, legs, and torsos, just for use in creating future figures. Refer to "Saving Poses" on page 135 for more about using the Select Subset option when you're saving figures.

To combine multiple figures into a new figure:

1. Load the figures you wish to combine into your Poser document.
2. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.

Using the expanding/contracting Hierarchy Editor, you can create new figures.

3. Set up parent-child relationships to establish the new figure's Hierarchy. Refer to "Using the Hierarchy Editor" on page 290 for more about using the Hierarchy Editor to create figure hierarchies.
4. Click the Create Figure button on the Hierarchy Editor.

   If the figures you've combined use standard Poser body parts, Poser follows the Hierarchy you've established to automatically create the joints necessary for the new figure to operate correctly in the Poser workspace.

Combining Props

You can use the Grouping tool to select specific polygons on a figure or prop. With this feature, you can create new props. For example, you could start with the ball or cube props, modify them, then save a series of props that, when combined, create a robot body. Refer to "Using the Grouping Tool" on page 157 and "Adding Props to the Library" on page 175 for more details.

Use the Grouping palette to create your own props.

To combine props into a new figure:

1. Load the props you wish to combine into your Poser document.
2. Position the props to form the new figure.
3. Choose **Window menu> Hierarchy Editor** to display the Hierarchy Editor.
4. Set up parent-child relationships to establish the new figure's Hierarchy. Refer to "Using the Hierarchy Editor" on page 290 for more about using the Hierarchy Editor.
5. Click the Create Figure button on the Hierarchy Editor.

The Hierarchy Editor Create Figure button.

Poser follows the Hierarchy you've established to create a new figure. Once created, you can use the Hierarchy Editor to fine-tune rotation order, so that body parts twist and bend as desired.

Tip

In addition to parent-child relationships, the Figure menu> Point At command can be useful for controlling the movement of individual body parts in a robot figure.

Creating Figures using other Software

You can create your own Poser figure, using another 3D software program, like MetaCreations Ray Dream Studio. When you create figures outside of Poser, creation is a multi-step process.

Deciding how to Start

Before you begin to create articulated, bending figures in Poser, you need to make the following decision.

You can:

- Follow specific naming rules for body groups, then use the Hierarchy Editor in Poser to automatically apply standard Hierarchy and rotation order to your figure.
- Use non-standard (or a combination of standard and non-standard) naming for body groups and use the Poser Hierarchy

Editor to manually establish a figure Hierarchy

- Use non-standard (or a combination of standard and non-standard) naming for body groups, then create a figure Hierarchy as a text file and convert it for use as a Poser figure Hierarchy

Regardless of what you decide, the figure you create must be set up properly and stored in the correct format. That done, you can move or pose the model, just as you would any of the models included with Poser. With the right setup, you can make anything from an accordion to a zebra into a poseable figure.

Understanding the Process

To create a poseable figure, follow these steps.

- Create a 3D model of the new figure.
- Use the Poser **File menu> Import** commands to bring the contents of your 3D figure file into the current document.
- Use the Hierarchy Editor to create a Hierarchy file for the figure (or create a Hierarchy file as a text file and convert it to a Poser Hierarchy file).
- Adjust any joint parameters of body parts that twist or bend incorrectly.
- Set any necessary body part limits.
- Use the Hierarchy Editor to set up Inverse Kinematics (IK) chains.
- Set surface materials for the figure.
- Add any desired morph targets for adjusting the size and shape of body parts.
- Save the new figure to the Libraries palette.

Determining Model Format

In order to use figure geometry in Poser, you must store it in a Wavefront (OBJ) compatible format. With Poser 4, you can import model files in DXF, BVH, 3DMF, Wavefront OBJ, 3D Studio (Windows), and Painter3D (Detailer text) formats.

When creating your model, use only polygons. Nurbs or spline surfaces will not translate correctly.

Grouping Body Parts

Poser uses group names to identify body parts. Some Poser features, like the Walk Designer, require specifically named body parts. The group name is also the default name for working with this body part (you can change that at a later time).

It is important to denote the individual moving sections. You can store body parts as individual OBJ files or save the entire figure as a single file. With either method, plan carefully how you separate polygons into individual moving parts.

You don't need to move these parts to the origin individually. You should leave them where they naturally relate to one another. Set up local origins later, inside Poser.

Note

When you store each body in a separate file, specify only one group in each file. That group contains all the polygons in that file.

When you store the entire body in one file, you must use "groups" to separate different parts of the body that represent the moving Hierarchy. Saving the entire body in one file is usually the preferred method.

It is very important not to overlap groups. Wavefront grouping allows polygons to be in more than one group. If this happens, the overlapping polygons are duplicated when you bring the file into Poser and each group is turned into a separate Poser body part. For example, if you build a human-like object, you need to separate model polygons into the following groups:

- rHand
- lHand
- head
- neck
- lCollar
- rCollar
- chest
- abdomen
- hip
- rThigh
- lThigh
- rShin
- lShin
- rFoot
- lFoot
- rShldr
- lShldr
- rForeArm
- lForeArm

In order to use a figure in the Walk Designer, or have Poser 4 automatically apply Standard Figure Hierarchy and Rotation Orders, you must use the above groups in the figure.

Note

If you plan to create a figure Hierarchy file outside of the Poser 4 Hierarchy Editor, import your figure file as a prop first, to check that the geometry imports correctly.

Naming Groups

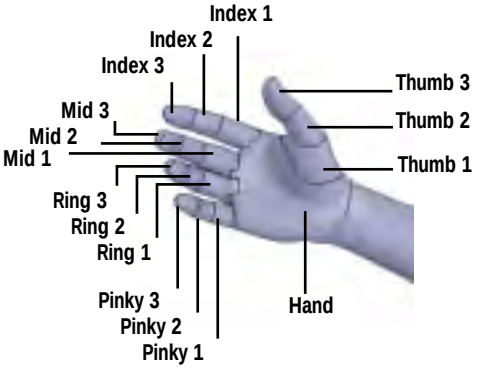
In a Poser figure file, each body part actually has two names: and internal name and a user name. It is important that certain body parts use standard internal names in order to be available for specific Poser features. You can set the user name (specified by the "name" line of actors) as you wish.

Use the following body part names / Wavefront group names when available:

- **rHand** for the body part that represents the base palm of the right hand
- **lHand** for the body part that represents the base palm of the left hand.

In order for the hand library features to work completely, the fingers of the hand should be broken up using the following names (working from root to tip):

- rHand, rPalm, rKnuckles
- rThumb1, rThumb2, rThumb3
- rIndex1, rIndex2, rIndex3
- rMid1, rMid2, rMid3
- rRing1, rRing2, rRing3
- rPinky1, rPinky2, rPinky3
- lHand, lPalm, lKnuckles
- lThumb1, lThumb2, lThumb3
- lIndex1, lIndex2, lIndex3
- lMid1, lMid2, lMid3
- lRing1, lRing2, lRing3
- lPinky1, lPinky2, lPinky3



The Hierarchy of the hand.

Arranging Groups on a Model

When Poser processes a new model's geometry and generates a Poser Figure Library entry, it automatically adds bending joints between parent and child objects as specified in the Hierarchy file.

Joints only bend polygons of the objects that are contained in the parent or child body part at any given joint. So, all polygons that are physically located at a seam must be contained in either the parent object group or the child object group. In other words, you cannot have three groups joining at the same place.

A good rule of thumb to use when creating groups is: if two objects don't have a parent-child relationship, they shouldn't be touching each other. It's important to keep this in mind when you set up groups, otherwise gaps appear when you start bending the model in Poser.

The following example shows the connection of the abdomen, hip, and upper leg of a horse. Since the abdomen is a child of the hip and the upper leg is also a child of the hip, there is

no parental attachment between the abdomen and the upper leg. Therefore there can be no physical attachment between the abdomen and the upper leg.

The wrong way to connect groups on the horse.

Another example of the wrong way to place groups.

The correct way to place groups on the horse.

Looking inside the Poser Hierarchy File

You generally create scene hierarchies in the Poser 4 Hierarchy Editor, but you can create them outside of Poser in any text editor that can save documents in a text-only format.

The Hierarchy file describes how the groups in a figure are arranged. It outlines the parent-child relationships between groups. Once created it can be imported into Poser where it is converted to create a new figure file in the New Figures library.

The Hierarchy file specifies:

- the geometry (OBJ) file to use
- the hierarchical connections (parent-child relationships) of the body parts
- the desired rotation order of each body part
- each Inverse Kinematics (IK) chain to be included in the figure

Following is an example Hierarchy file; it represents the full Hierarchy for a horse, including curve channels for the tails.

objFile:Runtime:Geometries:horseHi:
horseHiP3.obj

```
1 hip zxy
    2  abdomen zyx
        3 chest zyx
          4 lShldr yzx
            5 lUpArm yzx
              6 lForeArm yzx
                7 lWrist yzx
                  8 lHand yxz
          4 rShldr yzx
            5 rUpArm yzx
              6 rForeArm yzx
                7 rWrist yzx
                  8 rHand yxz
          4 lowNeck zyx
            5 upNeck zyx
              6 head yzx
    2   lThigh yzx
        3 lLeg yzx
          4 lShin yzx
            5 lAnkle yzx
              6 lFoot yxz
    2 rThigh yzx
        3 rLeg yzx
          4 rShin yzx
            5 rAnkle yzx
              6 rFoot yxz
    2 tail1 zyx curve
        3 tail2 zyx curve
          4 tail3 zyx curve
            5 tail4 zyx curve
ikChain LeftLeg lThigh lLeg lShin lAnkle

ikChain RightLeg rThigh rLeg rShin
rAnkle

ikChain LeftHand lShldr lUpArm
lForeArm lWrist lHand
```

(continued)

```
ikChain RightHand rShldr rUpArm
rForeArm
rWrist rHand
```

The File Header

The first line of the Hierarchy file contains the "OBJ File" command which specifies the location of the OBJ file associated with the new figure.

```
objFile:    Runtime:Geometries:horseHi:horseTex.obj
```

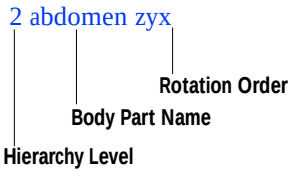
The file location should be defined using a Macintosh format file specification (that is, using colons). The file location is specified relative to the Poser application folder.

When the Hierarchy file is converted, the text of the OBJ file is read into Poser where a geometry resource is created and linked to the OBJ file. This process results in a new figure file.

From then on, when Poser uses this figure file, the geometry resource is used to define the figure Hierarchy relationships rather than the text stored in the OBJ file. Reading from the geometry resource is dramatically faster.

The File Body

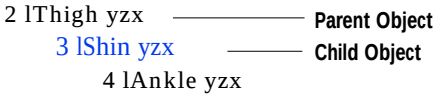
The bulk of the Hierarchy file contains lines similar to the one shown below:



A typical Hierarchy file line.

The first part of the line indicates Hierarchy level—or the parent-child relationship—of the body part. In this case, the abdomen body part is a child of the body part of the part on the next level up. Hierarchy levels are numbered in descending order, so the next level up from this part is 1.

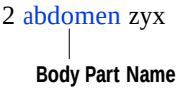
In the following example, the lShin object is located on the 3rd level of the Hierarchy. The closest level 2 line above would be the lThigh, so the lShin is a child of the lThigh.



Parent-Child relationships indicated in the Hierarchy file.

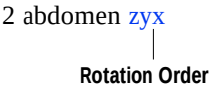
The indenting of the lines is not processed but is helpful visually to denote the Hierarchy levels.

The second part of the line specifies the name of the body part. In the example the part is called abdomen. This name must match the group name in the OBJ file.



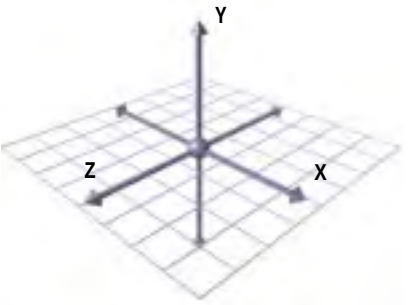
The body part name in a Hierarchy file line.

The 3-character string at the end of the line represents the rotation (or gimbal) order of the body part. A rotation order defined as "zxy" means that a Z axis rotation occurs first, followed by the X, then Y axis rotations.



The rotation order in a Hierarchy file line.

Poser uses the following X, Y, and Z axis orientations:



The X, Y, and Z planes that make up 3D space.

Assigning a rotation order is a three-step process:

- Always place the "twist" axis first. This axis should be placed lengthwise through the object. If the object, like a leg, is built down the Y-axis, specify the Y first, since that is the axis along which the leg twists.
- Of the two remaining rotations, place the one most likely to become 90 degrees last. This helps reduce rotation lock problems that occur when the middle rotation approaches 90 degrees.
- Place the remaining rotation channel second.

Some objects do not align to the major axes. In this case, you can align the coordinate system of the body part later, while adjusting the joint parameters. For the Hierarchy file, pick the closest rotation order. When you align the part later, the twist axis you choose becomes aligned down the length of the body part.

When Body Parts are Stored in Separate Files

If each body part were stored in a separate file, rather than all body parts being groups in a single file, you would specify the full path name for the file at the end of each line. This path is relative to the Poser 4 folder.

Here is an example of three links using this method:

```
1 link1 yzx
:Runtime:Geometries:examples:l1.obj
        2   link2 yzx
:Runtime:Geometries:examples:l2.obj
                3 link3 yzx
:Runtime:Geometries:examples:l3.obj
```

Using Curved Transformations

The Curved flag tells Poser that this link should use curve transformations. This is a method of bending designed for the tails of the animal figures in Poser. Here is an example used in the Horse figure:

```
2 tail1 zyx curve
        3 tail2 zyx curve
                4 tail3 zyx curve
                        5 tail4 zyx curve
```

Inverse Kinematic Chains

The last commands in the Hierarchy file specify the links that compose the individual IK chains. IK can also be defined by using the Poser 4 Hierarchy Editor. Here's how chains look after they've been defined. If you're creating a Hierarchy file manually, be sure to store IK information in the following format:

```
ikChain chainName firstLink nextLink
    nextLink... endGoal
```

In the example above, the ikChain is defined as follows:

```
ikChain   LeftLeg lThigh lShin lAnkle lFoot
          |
          Chain Name
```

An ikChain line in a Hierarchy file.

The name of an ikChain cannot contain spaces.

Converting Hierarchy Files

When you create a Hierarchy file manually, you'll need to convert it to an actual Poser Hierarchy file. Once the Hierarchy file is completed in the text editor, you can import it into Poser by converting it into a geometry resource (called a CR2 file).

This geometry resource is then used in conjunction with OBJ 3D data to create a new figure file with rotation order and IK relationships as defined by the Hierarchy text file.

On Windows, the resource is a separate file with the suffix RSR. On a Macintosh, the resource is stored with the OBJ file. If you need to edit the resource on a Mac, use a resource editor to remove the text from the OBJ file, or create a new text file by copying and pasting from the old one.

If you make changes to the Hierarchy file and then convert it again, the conversion won't re-create the geometry resource if it already exists in the OBJ file. So if you are trying to make geometry changes, you must either delete the resource, or start with a new blank text file that contains only the text portion of the OBJ file.

To convert a Hierarchy file:

1. Choose **File menu> Convert Hier File**. The Open dialog appears.
2. Locate the Hierarchy file you created in the text editor and click Open.

   If there are no errors, a Poser Body Library file is created.

   The Hierarchy conversion may take several minutes if there is a large geometry file.

   The figure file references the geometry file. If the location is of the geometry file changes, you must edit the figure file to designate the new location (specified relative to the Poser application in Mac format).

Verifying Hierarchy Files

Once you begin adjusting the joints, you are not able to regenerate the figure file a second time and have all your joint changes in place. Make sure that all parent-child relationships are correct before editing Joint Parameters. You can make geometry corrections later, but you cannot change the Hierarchy without creating different joints from scratch again.

Adjusting Joint Parameters

When the Hierarchy file was converted into a new figure file, Poser automatically added joints between all the parent and child objects in the figure. These joints may not work as you expect them to because they use the default joint settings.

Before you can pose your figure, you must adjust each body part's joint parameters. The Joint Parameters palette lets you select each joint, twist, smooth scale, and center parameter and adjust them for optimal bending. Refer to "Adjusting Joint Parameters" on page 312 for details.

It's highly recommended that you work from the outside of the figure in, making a first pass through to make sure all origins are located as desired. If you move the origin point (center of rotations) of a body part later, it carries along the other joint changes so the bending characteristics change. You'll save yourself from doing extra work if you specify the origins (centers) first.

Note

It's a good idea to periodically save your figure to a new Figure preset as you work so you can back up if you make mistakes.

Keep the IK chains turned off until all adjustments are completed. You can use the Zero Figure button to quickly set all rotations to zero while working.

Setting Limits

Limits establish a range of rotation, position, and scale for a given body part. Limits can be set for each body part on the figure. However the most commonly used and logical limits are Bend, Twist, Side-Side, and Front-Back. For these parameters, limits are expressed as the maximum and minimum degrees of rotation.

Limits are set using the Parameter Dial dialog. Refer to "Using the Parameter Dials" on page 121 for how to access the Parameter Dial dialog. Enter the minimum value of the parameter in the Min. Limit field and click OK.

Note

Remember to save your figure as a new figure in the Figures library periodically as you work, so you can back up if you make mistakes.

Setting Favored IK Angles

The IK in Poser works from the current rotations of a body part, so proper IK angles must be preset in the figure for it to work predictably. Therefore, the original rotation values loaded on the joint are important to help the IK system know which way to bend some joints.

Favored IK positions.

Before you memorize the default position of all the body parts, you should bend the ones that are used in IK chains so that they favor their natural bending directions. For example, a human thigh is bends slightly forward and out. The shin is bends slightly back and in.

Do this while keeping all the IK chains turned off. Only turn them on after you have set the favored angles.

Memorizing Default Positions

Memorizing the settings on a figure sets the default values and positions for all the figure's joints and body parts. The next time you use this figure, the memorized setting are used.

To memorize the figure's settings:

- Choose **Edit menu> Memorize> Figure**.

Setting Surface Materials

In order to set the preset material for your figure, you must edit its CR2 file that you created when you converted the Hierarchy file.

The preset material cannot be set from the Poser interface. You'll need to edit the final Figure library file with a text editor that is capable of opening any kind of file. At the end of the figure file is a block of text that specifies the preset material colors and texture map. If you've edited the regular material to be what you'd like, you can copy the information to the preset material.

The following is a sample of the surface material section of the CR2 file:

```
material shirt

    KdColor 0.972549 0.988205 0.972549 1
    KaColor 0 0 0 1
    KsColor 0.00784314 0.00784314
0.00784314 1
    TextureColor 1 1 1 1
    NsExponent 30
    bumpStrength 0
    ksIgnoreTexture 0
    textureMap "Biz Man Texture.pict"
        0 0
```

Adding Morph Targets

If you have created Wavefront format OBJ files that have the identical vertex ordering as any individual body part, you can load them as morph targets.

Refer to "Setting up Morph Targets" on page 272 for more information.

Naming Body Parts

The names of the groups you set up in the OBJ file and Hierarchy file may not be the most descriptive names you can use. Once the main parameters are set for the figure, you can change the name of each body part.

To change the name of a body part:

1. Double-click a body part. The Element Properties dialog appears.
2. Enter a new name in the Name field.

Tutorial: Creating a Figure in Ray Dream Studio

In this tutorial, a Ray Dream Studio object is converted into a Poser figure. A pre-made mesh object included on your Ray Dream Studio 5 CD is used, but the concepts can be applied to any of your own models.

Lesson 1: Creating the Initial Figure

To create the initial figure:

1. Place your Ray Dream Studio 5 CD in the drive and Launch Ray Dream Studio 5.
2. Create a new, empty scene.
3. Choose **Windows menu> Browser** to open the Browser, then select the Objects tab.
4. Choose **File menu> Add Folder/ Directory**.
5. On your CD-ROM drive, select the **Dream Models: Mesh Models** folder.

   The folder is added at the end on the right, so you may need to scroll the window using the scroll bars at the bottom of the window.
6. Drag and drop the Woman2 object into the Time Line Hierarchy. The Woman2 object is located towards the bottom of the list.
7. The Woman2 object is a group of objects. You must move all the groups into the mesh modeler, but retain individual body parts. Use the OBJ exporter to accomplish this.

   Choose **File menu> Save As**.
8. In the dialog that appears, set the file format to Wavefront OBJ and click Options.
9. Enable the Export Full Path for Grouping checkbox and click OK.
10. Select a folder, then click Save.
11. Close the Ray Dream Studio version of the scene.

Lesson 2: Naming Body Parts

To name the upper body parts:

1. Reopen the OBJ file, using the default settings for Import options.
2. Double-click the object to jump into the mesh form modeler.

   If the set name dialog appears, leave the default name and click OK.
3. Choose **View menu> Preset Position> Front**.
4. Choose **View menu> Preview (Fast)**.
5. Using the Zoom tool, zoom in on the figure to about a 4:1 magnification.

   All the individual objects from the original Ray Dream Studio groups are now separate polymeshes inside the mesh modeler.
6. Double-click on the chest with the selection tool.

7 With the chest selected, choose **Polymesh menu> Name Polymesh**.

8 Change the name to "chest", then click OK.

9 Repeat the above for the neck portion of the figure, naming it "neck."

10 Call the left and right shoulder "lShldr" and "rShldr."

To match Poser conventions, left and right should be from the reference of the figure, opposite to your own left and right. Also, make sure the selection tool has selected the entire polymesh before trying to use name polymesh. If double-clicking doesn't select the entire polymesh, double-click in an deselected area of the object. If the name polymesh feature is grayed out, then the entire polymesh is not selected.

11 Using the same procedure, name:

- the left and right upper arms: "lUpperarm" and "rUpperarm"
- the left and right forearm: "lForearm" and "rForearm"
- the left and right hand "lHand" and "rHand"

To name parts of the head:

1 Double-click the forehead of the figure to select the head.

2 Use Name polymesh to name the object "head."

3 Select **View menu> Hide Selection**.

You may need to zoom in to see the eyes and mouth now left behind.

4 The eyes and mouth are currently a single object. Use the marquee tool to select the figure's left eye.

5 Choose **Selection menu> Detach Polygons** to make the eye a separate polymesh.

6 Choose **Selection menu> Weld** to link the eye to the eyelashes.

7 Choose Name Polymesh to name the object "lEye."

8 Make the figure's right eye a separate polymesh, link the eye to the eyelashes, and name it "rEye."

9 Double-click on the mouth.

10 Use Name Polymesh to name the object mouth.

To name the midsection body parts:

1 Zoom out, and then zoom in around the midsection of the figure.

2 Double-click just above the belt and name this section "abdomen."

3 Choose **View menu> Hide Selection**.

4 Use the marquee selection tool to drag a selection around the belt and into the hip.

5 Hold down the shift key and double-click with the selection tool on a deselected area of the hip.

6 Choose **Selection menu> Weld** to create a single hip object.

7 Make sure you have a polymesh selected, and then name it "hip."

8 Zoom out, then zoom back in on the legs.

9 Double-click on a vertex in the shorts below the hip.

You can see that both the left and right side of the shorts are a single object.

10 Use the marquee selection tool while holding down the Alt-Option/Alt key to deselect the figure's left side of the shorts.

You'll probably want to start from the outside and slowly deselect inwards until you reach the space between the two legs.

11 Choose **Selection menu> Detach Polygons**.

12 The bottom hem of the shorts is also a separate object. Select the hem, then deselect the figure's left side with the Ctrl/Alt-marquee selection.

13 Choose **Selection Menu> Detach Polygons**.

14 Select just the figure's right hem.

15 Choose **View menu> Hide Selection**.

16 Select the polygons that are behind the hem, which connect the shorts to the right thigh.

17 Choose **View menu> Reveal Hidden Vertices**.

18 Use the selection tool with the shift key to also select the right hem and right leg of the shorts.

19 Choose **Selection menu> Weld**.

20 Repeat the previous two steps for the left pant objects.

21 Name each side "lPant" and "rPant" respectively.

To name body parts from the thighs downward:

1 Zoom out, and then zoom in from the thighs down.

2 Select the left and right thigh and name them "lThigh" and "rThigh" respectively.

3 Select the left and right calf and name them "lCalf" and "rCalf" respectively.

4 The feet are actually broken up into areas of "foot" and areas of "sandal." For this tutorial, combine the areas into a single left and right foot. Double-click the figure's right ankle.

5 Use the marquee tool with the Shift key to select the rest of the right foot.

6 Choose **Selection menu> Detach Polygons**.

7 Choose **Selection menu> Weld**.

8 Name the object "rFoot."

9 Repeat for the left foot, naming the resulting object "lFoot."

To name parts in the shoulder area:

1 Zoom out, and then zoom back in around the right shoulder.

2 Select the right shoulder.

3 Hold down the Shift key and double-click on the very edge of the hem of the shirt with the selection tool. This selects the polygons moving inward towards the upper arm.

4 Choose **Selection menu> Weld**.

5 Rename the resulting object rShldr.

6 Repeat for the left shoulder.

7 Select **View menu> Reveal hidden vertices** if any are still hidden.

8 Click Done.

9 Save a copy in Ray Dream Studio format.

Lesson 3: Checking Geometry Imports

There are still a couple of steps to complete the object in Ray Dream Studio. Importing this object as a prop into Poser allows you to check the import of the geometry for errors.

This part of the tutorial illustrates potential problems you may have in your models, and how you might fix them.

To check for geometry errors in Poser:

1 Select Save As and set the file type to Wavefront.

2 Locate your Poser folder on your hard drive, then open the **Runtime: Geometries** folder.

3 Make a new folder called **rdswoman**.

4 Open the **rdswoman** folder and save the file as woman.obj.

5 Open Poser.

You may need to close Ray Dream Studio first in order to have enough memory.

6 Click and drag on the Translate In/Out tool to move the figure away from the camera.

7 Select **File menu> Import: Wavefront OBJ**.

8 Open the woman.obj file. Use the default import options.

9 Use the Translate tool to drag the figure up.

Lesson 4: Fixing Surface Normals

You may notice that some areas seem to have holes or appear inverted. This is because the surface normals are flipped. You should see holes in the eyes, neck, abdomen, thighs, and calves. You can fix this in Ray Dream Studio.

To fix the surface normals:

1 Close Poser, then restart Ray Dream Studio (if necessary).

2 Reopen the woman.obj file.

3 Double-click the object to enter the modeler.

4 Use the selection tool with the Shift key to select the eyes, neck, abdomen, thighs, and calves.

You'll probably need to select and hide the head to get to the eyes.

5 Choose **Polymesh menu> Reverse Polymesh Normals**.

6 Choose **View menu> Reveal Hidden Vertices**.

7 Click Done.

8 Select **File menu> Save As**.

9 Set the file type to Wavefront.

10 Click Options.

11 Turn on the Export Texture Maps option.

Although there are no maps assigned in Ray Dream Studio, the Export Texture Maps option allows you to set a material color for each body part in Poser. With this option turned off, the entire figure is considered one surface.

12 Save the file as womanfinal.obj into the **rdswoman** folder.

13 Close Ray Dream Studio. You do not need it for the remainder of this tutorial.

Lesson 5: Creating the Hierarchy File Manually

In Poser 4, you can create parent-child relationships in the Hierarchy Editor. If you'd rather create them manually, here's how to do that. Refer to "Using the Hierarchy Editor" on page 290 for how to use the new Hierarchy Editor.

To create the Hierarchy file manually:

1 Using a text editor, create your Hierarchy file to appear as follows:

```
objFile:Runtime:Geometries:RDSWoman:womanfinal.obj

1 hip zxy
    2 abdomen yxz
        3 chest zyx
            4 neck yxz
                5 head yxz
                    6 lEye yxz
                        6 rEye yxz
                            6 mouth yxz
                4 lShldr xzy
                    5 lUpperarm xyz
                        6 lForearm xyz
                            7 lHand xyz
                4 rShldr xzy
                    5 rUpperarm xyz
                        6 rForearm xyz
                            7 rHand xyz
    2 lPant yxz
        3 lThigh yxz
            4 lCalf yxz
                5 lFoot zxy
    2 rPant yxz
        3 rThigh yxz
            4 rCalf yxz
                5 rFoot yzx

ikChain lArm lShldr lUpperarm lForearm lHand

ikChain rArm rShldr rUpperarm rForearm rHand

ikChain lLeg lPant lThigh lCalf lFoot

ikChain rLeg rPant rThigh rCalf rFoot
```

2 Save the Hierarchy file into the **rdswoman** folder and name it womanfinal.phi.

To scale the new figure:

1 Open Poser

2 Select **File menu> Convert Hierarchy File**.

A new figure is created in a group called New Figures.

3 Open the library window and click on the figure tab.

4 Select the New Figures category.

5 Double-click the new figure (with the shrugging Poser figure icon).

6 The figure is initially very large. Select "body" from the Current Elements pop-up menu.

7 Double-click the scale parameter dial and change the value to 4.2%.

To adjust body part color:

1 Choose **Figure menu> Drop to Floor**.

2 Each body part is a different color. Use the color tool on the body parts to better organize the figure.

3 Use a similar color for the chest, abdomen, left shoulder and right shoulder to form the shirt.

4 Use a similar color for the hip, left pant, and right pant to form the shorts.

5 Use a similar color for each foot.

6 Color the mouth red and each eye white.

7 Use a skin tone for the remaining body parts.

8 Select **Edit menu> Memorize: Figure**.

9 Add the figure to the library, naming it Womanfinal.

Lesson 6: Setting Joint Parameters

If you use the Poser 4 Hierarchy Editor, you can have Poser set joint parameters based on the Hierarchy you define. Even so, you will may want to make adjustments to joint parameters.

Note

Before adjusting joint parameters, always check that IK Chains for the figure are turned off.

Your first task is to set the center of rotation for all body parts. If you change this later, it affects all other bending parameters for parent and child body parts.

To set the hip center of rotation:

1 Switch to outline display mode.

2 Open the Joint Parameters window.

3 Click on Zero Figure.

4 Start by selecting the hip.

5 Change the Center point x and z values to 0.0.

6 Set the y value to 0.9.

7 Set the End Point y value to 0.8. The x and z value should be 0.0.

To set the centers of rotation for pant body parts:

1. Select the right pant body part.Look at the center of rotation.
2. Select the right thigh body part.
3. Drag the center of rotation up towards the edge between the right pant and the hip. This gives the effect of the thigh and the pant leg moving together.
4. Repeat this for the left thigh.

To set the center of rotation for the abdomen:

1. Select the abdomen.
2. Drag the center of rotation down, slightly into the hip.

To set the center of rotation for the chest:

1. Select the chest.
2. Drag the center of rotation up slightly, within the bottom of the chest.

To set the center of rotation for the arms:

1. Select the right upper arm.
2. Move the center of rotation towards the joint of the shoulder.
3. Repeat this for the left upper arm.

To set the center of rotation for the head:

1. Select the head.
2. Switch to the face camera.

To set rotation values:

1. In the Joint Parameters Window, switch from center to yrot.
2. Swap the twist start and twist end positions. You can test your settings by adjusting the yrot Parameter Dial in the Parameter Dial Window. The twist end (in green) should be above the chin. The twist start (in red) should be below the chin and into the neck. This blends the rotation of the head into the neck.
3. Switch to the camera from the right, and zoom in on the head and neck.
4. Switch from yrot to xrot in the Joint Parameters Window.
5. Drag the static handle on the left (in red) down below the chin.
6. Drag the dynamic handle on the right (in green) counter-clockwise till it is also below the chin, but still higher than the static handle you dragged in the previous step.

   Notice that as the dynamic handle hits the static handle, the static handle is also moved.
7. Drag the static handle counter-clockwise until it is at the top of the back of the neck.
8. Test your settings by adjusting the xrot parameter dial.

To adjust scale values:

1. Switch from xrot to neck_scaleY. This controls the blending zone for the y-axis scaling of the neck when scaling the head.
2. Set Low start to 5.97 and Low end to 6.14.

   This sets the blending to within the neck, below the chin.
3. Select the mouth_scaleY.
4. Set Low start to 6.4 and Low end to 6.27.
5. Select lEye_scaleY.
6. Drag the High end up towards 9.
7. Repeat this for the right eye.
8. You can now scale the head to see the effects.

   You can now set limits for each body part.

To set remaining limits.

1. Repeat the above procedures for the remaining body parts, so that your figure moves and bends realistically.
2. Set the default IK angles. Memorize the default position.
3. Save the figure to the library.

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Using Poser 4 with Other Applications

Using Poser with Ray Dream Studio 5

Poser adds features to Ray Dream Studio's Mesh Form Modeler. The Mesh Form Modeler lets you edit an object's surface directly, by editing the points that define its surface. For a full description of the Mesh Form Modeler, refer to the Mesh Form Modeling chapter in your Ray Dream Studio manual.

The following Mesh Form Modeling features have been added to the Selection and Polymesh menus.

Selection Menu

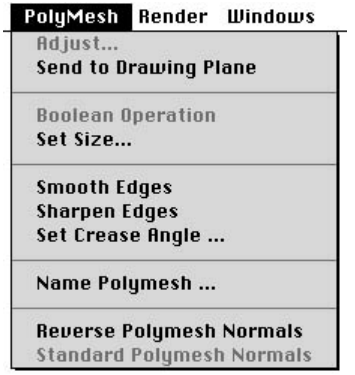
The Selection menu.

Name Polygons
Name Edges
Name Vertices:

Apply group names to selected polygons or edges. Poser uses these group names to name body parts when importing Hierarchy files to create new figures. Refer to "Creating Custom Figures" on page 301 for more information.

Detach Polygons: Separate the current selection into a new polymesh. The edges and vertices in common with the original and the new polymesh are duplicated, so that no polygons are lost. This is useful for breaking up a solid object into individual sections for use as body parts in Poser.

Polymesh Menu



The Selection menu.

Name Polymesh: Similar to name polygons, this option works on an entire Polymesh. It creates a group name for the polymesh; Poser uses this name when importing Hierarchy files to name body parts. Refer to "Creating Custom Figures" on page 301 for more information.

Reverse/Standard Polymesh Normals: When you export geometry in an OBJ file, Ray Dream assigns each polygon a direction, called a surface normal.

For some objects, Ray Dream Studio may assign normals in the wrong direction. In this case, it appears that you are seeing the interior of the object from the front instead of the front faces. Select these parts of the model in the Mesh Modeler, and then select **Polymesh menu> Reverse Polymesh Normals**. The OBJ exporter flips the normals when exporting.

Importing and Exporting OBJ Files

The OBJ file format can be used between Ray Dream Studio and Poser to:

- Create new figures from scratch using Hierarchy files
- Edit Poser geometry to create new morph targets
- Create objects in Ray Dream Studio to use as props in Poser

Importing OBJ Files

When importing OBJ files, the available options are:

Group Information: Although Wavefront objects can have a First or Last name associated with each group, Ray Dream Studio requires a single name per group. The Group Information option lets you choose the name to use within Ray Dream Studio. To import an object as a single polymesh, you must select the Make Only One Group radio button.

Scaling Factor: Define the unit conversion between Ray Dream Studio units and OBJ units. If you are importing Poser geometry to create morph targets, always use the default of 4.00 inches.

Create Meshform Objects: If None is selected, the object imports as an external object, with the minimum modeler as its default modeler. If One is selected, the object imports as one meshform object. The object is still broken up by its group names as individual polymeshes within the modeler if you did not use Make Only One Group from Group Information. If One for Each Group is selected, an individual object is created for each group.

Transpose Coordinates: Compensate for the difference in world coordinates between other programs and Ray Dream Studio. Ray Dream Studio has the y and z coordinate axes transposed from other programs, including Poser.

Note

Use the default settings when importing Poser figures.

To import an OBJ file:

1. Select **File menu> Import** or **File menu> Open** to open an OBJ file.
2. Set the file type to Wavefront (*.obj).
3. Select the OBJ file and click Open.

Exporting OBJ Files

When exporting OBJ files, you are presented with the following options.

Export Normals: Toggles exporting of surface normals on and off. You almost always want this setting turned on.

Export UV values: Toggles exporting of UV texture data on and off. Turn this on to enable texturing in Poser. Poser only supports UV mapping of figures and props.

Export Full Path For Grouping: If you are saving a number of Ray Dream Studio objects that have been grouped, the groups are saved as Wavefront groups.

Export Texture Maps: Creates a Wavefront Material file to be used with the OBJ geometry file. This file describes how objects are textured. It creates one material for each group.

Transpose Coordinates: Compensates for the difference in world coordinates between other programs and Ray Dream Studio. Ray Dream Studio has the y and z coordinate axes transposed from other programs, including Poser.

Degree of Tessellation: Controls the smoothness of the exported object.

Textures Format: If the Export Texture Maps option is turned on and the objects have attributes which must be converted to texture maps, this controls the format of the texture files and their resolution.

To export an OBJ file:

1. Select **File menu> Export** or **File menu> Save As**.
2. Set the file type to Wavefront (*.obj).
3. Click on the Options button to alter the export options.

Using Poser with Painter 3D

You can export a figure as an OBJ file from Poser and then paint on it as you would any other model.

To use a Poser model in Painter 3D:

1. Create and pose a figure in Poser.

Poser figure.

2. Choose **File menu> Export> Wavefront OBJ**.
3. In the dialog that appears, select the Single frame option.

Select Single Frame.

4 In the Hierarchy Options dialog that appears, click OK to use the default settings.

5 Launch Painter 3D.

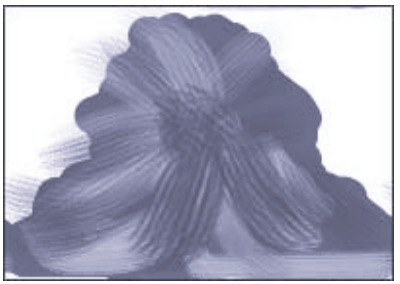
6 Choose **File menu> Acquire > wavefront obj**.

The figure appears in the model window.

Poser figure in the Painter 3D model window.

7 Create a texture map for the body and hair.

Painter 3D texture map.



Painter 3D hair texture map.

8 Save the texture maps as pict files for use with your Poser model in other applications.

Painter 3D texture map applied to figure.

Using Poser with Bryce 3D

You can import Poser Figures as OBJ into any Bryce scene.

To use a Poser model in Bryce:

1 Create and pose a figure in Poser.

Poser figure.

2 Choose **File menu> Export> Wavefront OBJ**.

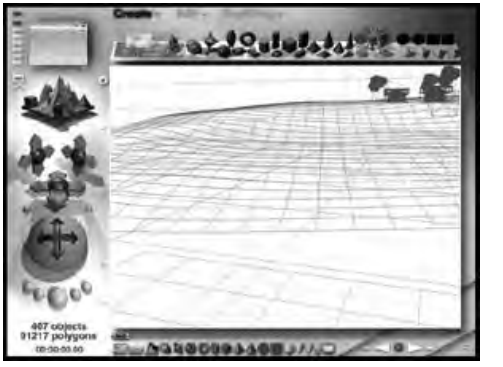
3 Select the Single frame option.

Select Single Frame.

4 In the Hierarchy Options dialog that appears, click OK to use the default settings.

5 Launch Bryce.

6 Open or create a scene where the Poser figure is to be placed.

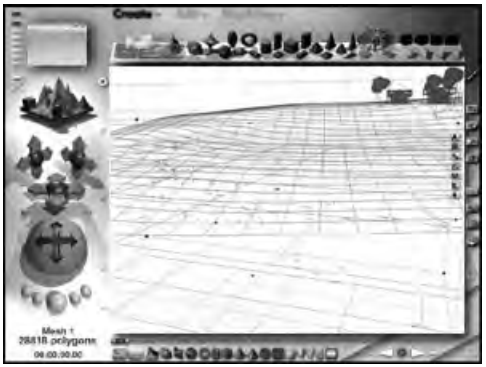


The unrendered scene.

The rendered scene.

7 Choose **File menu> Import Object** to add the figure to the scene.

8 Scale and position the figure appropriately.



Scale and position the figure.

The figure is placed in the scene with a default gray texture attached.

The default gray texture.

9 If the figure has hair, the hair and body import into Bryce as a group. To map each part:

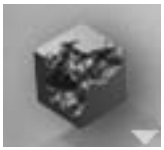
- Ungroup the hair and body by clicking the ungroup button, which appears beside the object when selected.

- Select the body to map it first.

To apply a texture map to the figure:

1 Click to select the figure.

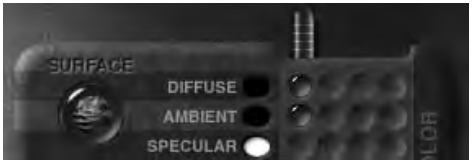
- Click the Edit Materials icon in the Edit Palette.



The Materials Lab appears.

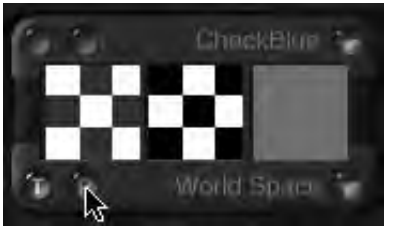
The Materials Lab.

2 Click column A for Diffuse and Ambient channels.



Select Diffuse and Ambient channels.

3 Click the Image Texture button in material A.



The Image Texture button.

4 Set the mapping mode to parametric and click the Texture Source Editor button in material A.

The Texture Source Editor button.

The Texture Source Editor appears.

The Texture Source Editor.

5 Click Load (above the first large pict box).

6 Apply texture map(s) with one of the following methods.

- Select and open the pict file texture you created in Painter 3D. Refer to "Using Poser with Painter 3D" on page 326 for details on creating a Painter 3D texture file for a Poser model.
- To use the default texture from Poser, open **Poser:Runtime:Textures** and select the appropriate texture. Poser renders as a multiplication of the texture and body part color.
- Open the Poser pict file in an image editing application (such as Painter or Photoshop), edit the colors, add patterns, then save the file as a new pict file for use with your figure.
- Use Bryce's textures to create surreal figures (such as rock or glass).

Open the Painter 3D texture file.

7 Click on the black dot above the second large pict box to delete the mask.

8 Click on the check mark to accept the deletion.

9 Adjust other material channels appropriately.

For this scene, the specularity and reflection were increased to make the swimmer look wet.

10 Click on the check mark to accept material.

The final result.

11 With the hair selected, repeat these steps to apply the hair texture.

Using Poser on the World Wide Web

If your computer is connected to the Internet, you can access the World Wide Web directly from Poser. You can exchange information with other Poser users, visit the MetaCreations site, or view the latest technical support information.

Internet Connection

You must have an Internet connection and a browser package to use the Web-based features of Poser. If you have an account with an ISP (Internet service provider), such as EarthLink, AOL, or other provider, you are ready to go. Otherwise, acquire an Internet account and install a modem on your computer. Once you have a connection, you can start using Poser's Internet-based features.

If you have an e-mail only account with a provider such as Juno, you will not be able to use all of the Web-based features of Poser.

Using a Browser

The two most common browsers are Internet Explorer and Netscape Navigator. Use version 4.0 or greater of either browser to take advantage of interactive HTML features.

Windows Users

If your computer is running Windows 95, Windows 98, or Windows NT 4.0 or greater, you should already have Internet Explorer installed. If not, you'll need to install it. Once you have an account with an ISP, you can start using the Web-based features of Poser.

Macintosh Users

Once you have an account with an Internet provider and a browser software package installed, you can start using the Internet-based features of Poser.

Accessing the Web

Poser now has a "Links" menu that will launch your default browser and take you to the one of the Poser-related Web links in your links list. You can update this links list to add your own links and delete any default links you do not use.

In addition, you can also export both still files to the Web using the Export Image or Render to Disk options on the File menu. You can export animations through the Render Animation feature.

To select a Web link:

1. Choose **Help menu> MetaCreations Web Links>** *choose a link* for links to MetaCreations Web pages

   or

   Help menu> Other Web Links> *choose a link* for links to Poser Web sites.

2. Poser launches your browser and opens the desired link.

Modifying Poser Web Links

You can create, delete, or edit Poser Web Link files. Each link is a simple ASCII file that contains a line with the link's URL.

To add, delete, or edit Web links:

1. From your desktop, open: **Poser:Runtime:Weblinks: MetaCreations/Other Web Links**. Link files appear in these folders.
2. Do any of the following:
   - To change the name of a link, highlight the filename and enter a new name.
   - To delete a link, drag its file to the Trash/Recycle Bin.
   - To create a new link, open a text editor such as Note Pad or SimpleText. Enter the URL on the first line of the file, and save the file in the **Poser:Runtime:Weblinks: MetaCreations/Other Web Links** directory.
   - To change a link, open the link file in your text editor, enter the new URL, then save and close the file.
3. Restart Poser.

   Your menu reflects the new links.

Using Poser with MetaStream

You can export Poser scenes to MetaStream format files for use on web sites.

To export a Poser scene to MetaStream format:

1. Create and pose figures and objects in Poser.
2. Choose **File menu> Export> MetaStream**.

   Two file formats are generated:

   - HTML: embeds MetaStream output generated by Poser using the EMBED tag.
   - MTS: contains compressed geometry and textures.

Double-click the HTML file to open the output.

Use MetaStream objects as embedded objects in an HTML page. This gives the page author full control over a wide range of rendering and interaction options described at the MetaStream Web site:

http://www.metastream.com

If you open a raw MTS file, the plug-in runs with all attributes set to default values.

Textures generated by Poser are already lit (by real light) and do not need additionally shading by synthetic lights, so set texture shading to off.

Note

If Infini-D is installed on your computer, MTS files appear with an Infini-D icon. Double-clicking this icon launches Infini-D. If an error message appears, make sure the Infini-D path information in the HTML file is correct and that all required libraries are available.

Using Poser with Canoma

Canoma models can be exported in the OBJ format for import into Poser.

Exports to Poser Prop command within Canoma exports a .pp2 file and several .bmp (Win)/.pict (Mac) textures.

To use a Canoma model in Poser:

1. Manually copy or move the .pp2 file to any immediate subfolder of **Runtime: Libraries:Props**.
2. Move or copy all the .bmp or .pict files to:

   *PoserAppDirectory***:Runtime:Textures**

The Canoma-generated object or scene appears in the list of props (without a special icon) and with the name you give the prop. You can place and work with the prop like any other.

Tip

Keep shortcuts and aliases for the Poser texture and prop type folders handy to where you generate the prop file, then drag the files onto the shortcuts. This is faster than hunting down the directory.

A word of caution: do not give two Poser generated props the same name or you will overwrite part of one prop's textures.


USING THEIR INCREDIBLE DIMENSIONAL POWER OUR HEROS RESTORE DEPTH TO THE WORLD.
POSER 4
POSER 4
POSER 4
THE WORLD IS SAFE AGAIN THANKS TO THE POWER OF POSER4!

A

Troubleshooting

Installing Poser

If you have trouble with your installation, be sure to read “Installing Poser” on page 15.

Poser (Windows) locks up the first time you launch it

Many video cards cannot use hardware acceleration at the high setting in any screen depth other than High Color or 16-bit. There are two ways to correct this problem:

To set your display to High Color or 16-bit:

1. Right-click on your desktop.
2. Select Properties.
3. Choose the Settings tab.

4 Change the color palette to High Color (16-bit.).

To lower the graphics hardware acceleration setting in Windows:

1 Select the Window Start button.

2 Choose Settings.

3 Open the Control Panel.

4 Double-click the System Icon.

5 Select the Performance tab.

6 Click Graphics.

7 Adjust the Hardware Acceleration slider to a lower position.

8 Test your system using this method until you find the level of hardware acceleration compatible with Poser.

Poser (Windows) does not accept your serial number

This problem may be related to your video drivers. You can set your display to VGA (256 color). Or on NT, reboot and choose NT VGA mode.

To allow for CD-ROM support and 16-color video:

1 Right-click on your desktop.

2 Select Properties.

3 Choose the Settings tab.

4 Change the color palette to VGA (256 color).

If this procedure does not work, enter the serial number in all fields (name, serial number, etc.).

Poser (Macintosh) does not accept your serial number

Create a custom extension set according to the instructions in "Macintosh Installation" on page 15.

Macintosh Extension conflicts

Create a custom extension set as described in "Macintosh Installation" on page 15, add extensions, and test Poser to see if the conflict is resolved. Some culprits of extension conflicts are scheduling applications, task bars, and RAM doubling type applications.

Interface corruptions are caused by bad fonts (such as system 8-8.1's charcoal). Update older versions of Adobe Type Manager (ATM), as they can have conflicts.

B

Glossary

Aliasing A visual artifact caused by low-resolution sampling that can cause hard edges or areas of high frequency in an image to look jagged. Refer also to Anti-aliasing.

Angle Falloff The amount of diminution in the brightness of a spotlight toward the edge of a light cone.

Animation Controls A control panel located at the bottom of the Poser Workspace that lets you quickly set up and preview animations using a simple click and drag interface.

Animation Duration The amount of time that an animation lasts.

Animation Elements List A list that displays all figures, lights, cameras, and props currently in the studio. The Animation Elements List is accessed on the Animation palette and is used during the editing of animation keyframes.

Animation Frame Count Refer to Frame Count.

Animation Frame Rate Refer to Frame Rate.

Animation Frame Size Refer to Frame Size.

Animation Graph Palette Refer to Graph Palette.

Animation Palette A comprehensive dialog which lets you edit keyframe positions, create complex animations, animate individual body parts, and edit keyframes within an animation. Refer also to Animation Elements List.

Anti-aliasing The process of eliminating aliasing by higher resolution sampling, so that hard but jagged edges appear smooth and clean.

Auxiliary Camera An additional camera view. Like the Main camera, the auxiliary camera rotates around the center of the studio.

AVI A PC file type used for saving movies.

Axis A hypothetical linear path. The X, Y, and Z axes (width, height, and depth, respectively) define the directions of the 3D universe. The axis along which an object is rotated is the axis of rotation. An object's axes are parallel to its bounding box.

Box Tracking A tracking style that displays figures and objects as boxes at all times. Refer also to Figure Tracking, Fast Tracking, and Full Tracking.

BMP A Windows file format for bitmapped or pixel-based images.

Break Spline Interpolation A type of animation interpolation which has no intermediate poses. Position changes abruptly only at the keyframes. Refer also to Constant Interpolation, Linear Interpolation, and Spline Interpolation.

Bump Map A type of surface material that determines the shape of bumps or dents on an object's surface.

Camera Plane The plane that a camera moves along.

Child An object that is linked to another object (its parent) in a hierarchy. When the parent is moved, the child moves with it. Refer also to Parent.

Chain Break A tool that breaks the chain of parts affected in a translation.

Constant Interpolation A type of animation interpolation that maintains a keyframe position, then instantly changes to the next pose. Refer also to Break Spline Interpolation, Spline Interpolation, and Linear Interpolation.

Deformers Properties that can be applied to an object (or group of objects) to deform its geometry. In Poser, deformers include magnets and waves.

Depth Cueing An effect which creates the appearance that elements far away are dimmer than elements closer to the camera.

Display Style A style that determines how figures, elements, or the document are displayed in the Document window.

Distance Falloff The distance from a spotlight itself to the point where the light has no effect.

Distant Light Refer to Infinite Light.

Document Display Style Refer to Display Style.

Dolly A camera view where the camera moves around in 3D space as if gliding on the surface of a sphere surrounding the Poser studio.

DXF Originally developed for use with AutoCad, this is the most common 3D file exchange format.

Fast Tracking A tracking style that displays figures and objects as boxes only when they are moving. Refer also to Box Tracking, Full Tracking, and Figure Tracking.

Figure Ring The ring that surrounds a figure and allows you to select the entire figure (as opposed to its elements).

Figure Tracking A feature used during the posing and shaping phases that changes the display of an object as you reposition its parts. Refer also to Box Tracking, Fast Tracking, and Full Tracking.

Flyaround View A camera view that lets you see all the contents of the studio at once. In this view the camera moves around an imaginary track above and away from the center of the studio.

Focal Length A camera control that changes the camera perspective in the studio. Decreasing the Focal Length increases the sense of perspective. Increasing the Focal Length "flattens" the sense of perspective.

Frame Count The total number of frames in an animation.

Frame Rate The number of frames used during one second of animation.

Frame Size A width *or* height value for the animation output set during Animation Setup. The aspect ratio of the Document window determines the other value.

Full Tracking A tracking style that uses a display style at all times, resulting in a slower motion as you manipulate poses and shapes. Refer also to Box Tracking, Fast Tracking and Figure Tracking.

Graph Palette A palette that lets you perform precise edits on keyframes and adjust the interpolation methods used in an animation. The palette is made up of two axes and a graph. The horizontal axis displays frame numbers which represent time in your animation.

Grouping Tool An editing tool that allows you to select specific polygons on an object and group them.

Group Edit Palette A dialog that accompanies the Grouping tool. The Group Edit palette includes various options for grouping and creating props.

Hierarchy A tree structure that lists the objects in the scene and shows their logical relationships to other objects.

Horizon Line A reference line in a studio that shows perspective.

Implicit (UV) Mapping Refer to UV Mapping.

Infinite Lighting A lighting control that shines light into the studio the same way the sun or moon shines on the Earth. The light rays from a distant source are parallel as they enter the Poser studio.

Interpolation An animation process by which Poser fills in the gaps between keyframes to create the illusion of motion. Refer also to Break Spline Interpolation, Spline Interpolation, Linear Interpolation, and Constant Interpolation.

Inverse Kinematics (IK) A feature which determines the dependency of jointed structures in movement. When an extremity on a figure moves, IK determines how objects joined to it respond.

Keyframe A representation of one point in time in an animation. Keyframes store changes in position for each body part in the figure, as well as changes in scale, color, lighting, or camera position.

Keyframe Animation The process of assigning different poses to different keyframes during an animation.

Keyframe Interpolation The method Poser uses to calculate the "in between" position of objects or elements. Refer to Spline Interpolation, Linear Interpolation, Break Spline Interpolation, and Constant Interpolation.

Libraries Palette A Poser library dialog by which figures, poses, props, lights, cameras, and animations are saved and retrieved.

Light Control A control used to create and position lights in the Poser Workspace. The Light control is located by default in the top left corner of the Poser Workspace.

Light Indicator A visible representation of a light source. The infinite light indicator appears as a ring around the figure. The Spotlight indicator appears as the outline of a Spotlight.

Linear Interpolation A type of animation interpolation that places intermediate poses at equal increments so the motion is smooth and straight. Refer also to Break Spline Interpolation, Spline Interpolation, and Constant Interpolation.

Magnet A deformer that distorts an object as if it were being affected by a magnet.

Memorize A feature that sets a default value for a Parameter Dial.

Memory Dots A graphical control that allows you to save multiple poses, cameras, and UI configurations within a file.

Morph A change made to the form or character of an object.

Morph Targets A parameter added to an object that allows you to gradually reshape it.

Natural Light Refer to Infinite light

OBJ A file format used in many 3D graphics programs.

Orthogonal A camera projection of a scene which has no perspective distortion.

Object Any 3D volume or other item that appears in the universe, including cameras and lights. When objects are grouped, their group is also described as an object.

Orbit Refer to X, Y, Z Orbit.

Orientation The direction an object faces as defined by the compound effect of the object's pitch, yaw, and roll. Usually, the most important aspect of an object's orientation is its relation to other objects. An object's relation to the viewpoint can be changed by moving the current camera.

Origin Refer to Prop Origin.

Parameter Dimensions or encompassing characteristics applied to a figure or object to define its relationship to itself or other objects.

Parameter Dial Movement controls that allow figure posing using precise numerical increments. By dragging a dial you can move a body part in small increments, allowing for precise poses.

Parent An object that is linked to another object (its child) in a hierarchy. When the parent is moved, the child moves with it. Refer also to Child.

Phoneme A linguistic term for the position of the lips, teeth, and tongue as they make sounds that produce specific letter sounds. In Poser, you can create the appearance of phonemes to create realistic facial animations, simulating speech.

PICT A standard Macintosh file format for pixel-based images.

Pitch The aspect of an object's attitude that describes its angular deviation along its vertical (top-to-bottom) axis.

Point of View (also viewpoint) The position and angle from which a scene is viewed. The point of view (POV) is always through a camera. You may add several cameras, positioned and angled differently, and switch the Universe window POV between them. When you render an image, you choose the POV from which the image should be taken.

Properties A collection of characteristics applied to (or available for) an object. Properties for an object appear in its Properties dialog.

Prop Origin 3D cross-hairs that represent a prop's center of rotation and scale. When you rotate a prop, it moves around the origin point.

QuickTime A standard Apple file format for movies.

Reflection Map A type of surface material that determines what is reflected on an object's surface.

Render The process of building a 2-dimensional bitmapped image from the information contained in a 3-dimensional scene.

Roll A camera command that tips the Dolly camera to the left or right.

Scale A value that describes the space an object occupies; synonymous with Size, though Size implies an absolute space.

Scrubber A control which represents the current period of time on the Animation Timeline. By positioning the Scrubber at different points in time, you can move through time to set up keyframes.

Smart Prop A prop setting that describes a specific location for a prop in relation to another object. The location is found when a smart prop is retrieved from the library.

Spline Interpolation A type of animation interpolation which places intermediate poses (and settings) on a curve. The element or object accelerates and decelerates in and out of the motion. Refer also to Break Spline Interpolation, Constant Interpolation, and Linear Interpolation.

Spotlight A light that is cast in a specific direction along a cone-shaped path, creating a "stage spot" effect.

Spread The amount of space between the fingers, controlled by the Spread Parameter Dial. Higher values spread the fingers out, while lower values push the fingers together.

SMPTE ISO standard acronym to describe time by hours:minutes:seconds:frames.

Surface Materials Rendering controls that let you apply texture characteristics to an object.

Symmetry A menu control that allows pose characteristics to be copied from one side of the body to another.

Taper Adjusts the scale of one end of an element only—the other end does not change.

Texture Map A type of surface material that determines the texture of an object's surface.

TIFF A graphics file format used for still-image bitmaps.

Timeline A graphical representation of time located in the Animation Controls.

Tracking Refer to Figure Tracking.

Translate In/Out Tool An editing tool that moves a selected part or figure in the z dimension.

Translate/Pull Tool An editing tool that moves a selected part or figure vertically or laterally (in the x and y dimensions).

Translation A manipulation of the position or attitude of an object. Also, an extrusion in which the cross section remains at one angle, regardless of the curvature of the sweep path.

Transparency Map A type of surface material that determines what is reflected in a transparent object's surface.

Turbulence A Parameter Dial that defines the roughness of a wave pattern. Go from a smooth pattern, to a jagged, turbulent one.

UI The User Interface (UI) is what appears when you launch Poser. The screen is the interface between the user and all of the features of the application. It contains buttons, pull-down menus, and paths to the features themselves.

URL Uniform Resource Locator (URL) is the string of locations in a Web address. The URL for MetaCreations, for example, is:

http://www.metacreations.com

Use Limits A feature that keeps body parts within a natural range of motion. Use Limits does not apply to parts involved in IK (Inverse Kinematics).

UV Mapping A 3D coordinate mapping system. UV coordinates are used in parametric mapping to align points on the shader with points on the object.

Vanishing Lines A guide used to achieve a realistic perspective when matching the view of a figure with the perspective in a background image.

Vector A line of movement defined by its end points or by the current position and one other point.

Vertex A control point on a path. Paths begin, change angles, and end at vertices.

Viewpoint Refer to Point of View

VRML Virtual Reality Modeling Language —a file format that can be imported and exported in Poser.

Walk Designer A dialog that allows you to experiment and control motion creating a realistic walking gait. The designer also provides a real-time preview of the walk.

Wave A deformer that distorts an object as if it were being affected by a wave.

Waveform The graphic representation of a sound file.

Wavefront A file format designating Wavefront OBJ.

xOrbit A camera control that tilts the camera forward or backward.

Yaw The area the Dolly camera points at as it rotates 180 degrees on its y-axis.

yOrbit A camera control that tilts the camera to the left or right.

zOrbit A camera control that orbits the camera around the studio. The camera continues to point at the center of the studio as it orbits.

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