

Layers: Interactivity and Animation

The first MTV generation has grown up—and discovered the Web. Unfortunately, putting the average home page next to the average music video is like pitting a minivan against a Maserati. If you want to keep restless eyes glued to your site, adding attention-grabbing animation and interactivity may do the trick.

Using Behaviors (Chapter 11) and a clever design tool called *layers*, you can make pictures dance across the screen, add pop-up tooltips to your links, and even create Web page sticky notes that visitors can drag around the window. Without Dreamweaver, such animation would require a complex mixture of HTML, programming, and Cascading Style Sheets (Chapter 8) that could leave you crying into your keyboard. You, however, as a Dreamweaver owner, can create these effects without any assistance from therapy or antidepressants.

Tip: As when using any cool new technology, have mercy on your audience when adding interactive effects. Make sure any animations you use contribute to the message of your site and don't become distracting gimmicks whose novelty wears off after the first viewing. Making a news bulletin wiggle across the screen might look neat, but it's pretty hard to read.

Creating Layers

A layer is a rectangular container that holds other page material—images, text, form elements, and even other layers. In this regard, it acts like a table cell (page 144). And as with a cell, you can define a layer's width and height and give it a background color or image.

But that's where the similarities end. What really sets a layer apart from other page elements is the way you can give it an exact position on a page. Want an image to appear exactly 100 pixels from the top edge of the browser window and 200 pixels from the left? Add a layer at that spot and insert an image in the layer—no jury-rigged table scaffolding required.

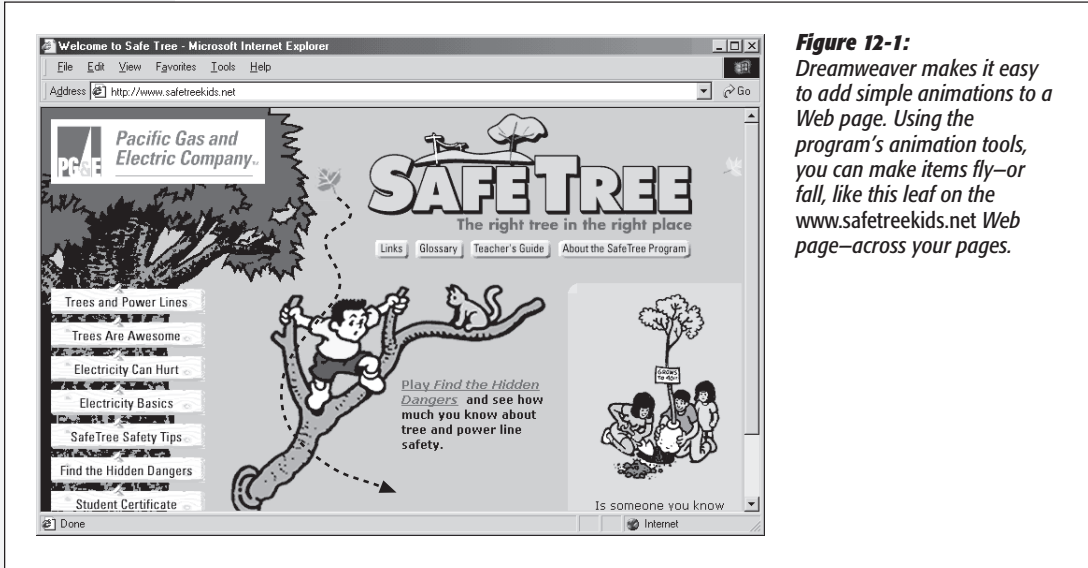


Figure 12-1: Dreamweaver makes it easy to add simple animations to a Web page. Using the program's animation tools, you can make items fly—or fall, like this leaf on the www.safetreekids.net Web page—across your pages.

Furthermore, because a layer uses *both* HTML and Cascading Style Sheets, it offers you a much wider range of control and flexibility, from exact screen placement to animation. For example, you can hide or show layers on the screen, nest them, and stack or overlap them. And you can control layers with JavaScript, effortlessly adding live interactive effects like animation.

As you probably know by now, any Web technology this powerful must come at a price: Since layers rely on Cascading Style Sheets, only version 4.0-and-later Web browsers can display them. Older browsers just ignore layer information and display their contents in the normal flow of the page—no exact positioning, no cool animation. To make matters worse, Netscape Navigator 4 has a notoriously hard time with layers, and often displays them incorrectly (see page 378).

Tip: The members of the W3C, the body that approves Web technology standards, originally envisioned layers as a tool for laying out pages. They hoped that layers, with their exact positioning properties, would let Web designers achieve the level of control found in print design.

But don't rely on layers for layout. Most new browsers can position layers accurately on the screen, but the complexities of complete page designs frequently overwhelm the current browser crop. Use tables (Chapter 6) to lay out your pages instead. (If you're a courageous and forward-looking Web designer, see the box on page 145 for layer-based design resources.)

Drawing with the Layer Tool

Dreamweaver wouldn't be Dreamweaver if it didn't give you several ways to perform a certain task, such as creating a layer. You can drag to create one freehand or use a menu command to insert a full-blown, complete layer. Your choices are:

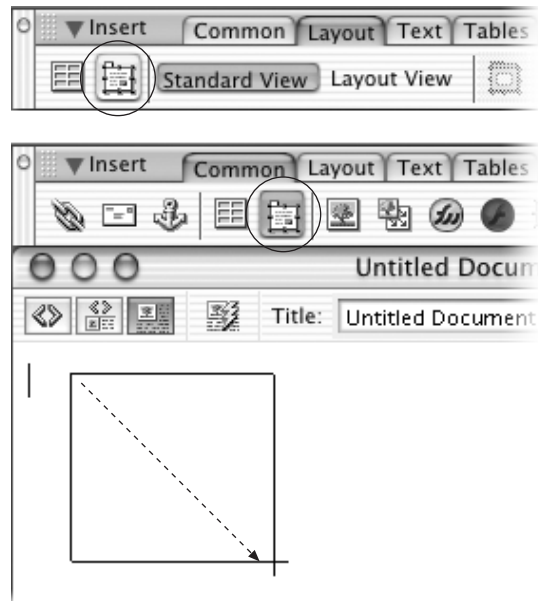
- **Use the Layer tool.** The Layer tool is in the Insert bar, under both the Common Layout tabs (see Figure 12-2). Click the Layer button and then drag the + cursor diagonally in the document window to create a box—the outline of the layer.
- **Use a menu command.** To insert a layer at the insertion point, choose Insert→Layer.

If you don't like the looks of the default layer that Dreamweaver inserts, choose Edit→Preferences, select the Layers category, and adjust the default layer's properties there. Add a background color, for example, or increase the layer's size. From then on, you can instantly create your favorite kind of layer using the Insert→Layer command.

Note: The Insert→Layer command makes it easy to place a layer inside of a table cell or another layer; however, this is not always a good idea. Layers inside table cells cause serious display problems in some browsers; furthermore, *nested* layers don't work well in Netscape Navigator 4 (see page 373 for more on nesting).

Figure 12-2:

The Layer tool on the Insert bar lets you add layers to your pages simply by drawing them in the document window. If you're creating multiple layers, hold down the Ctrl (⌘) key while drawing a layer. When you release the mouse, the Layer tool will remain selected, ready to draw the next layer.



However you create the layer, its outline appears in the document window with a blinking insertion point inside. As with table cells, you can type text into the layer or insert other objects—such as images or movies—into it.

Tip: The Layer tool doesn't work in Layout view or Code view. If the tool is grayed out in the Insert bar, make sure to switch back to Standard view (see Figure 6-3 on page 145).

Unless you fill it up or add a background color to it, a layer is invisible, like an empty, borderless table. Since it's difficult to identify, select, and modify something that's invisible, Dreamweaver adds visual cues to make working with layers easier (see Figure 12-3):

- **Layer marker.** The gold shield with the letter C represents the spot within the HTML of the page where the code for the layer actually appears.

While HTML objects generally appear in the document window in a top-to-bottom sequence that mirrors their order in the HTML source code, the position of layers themselves doesn't depend on where the layer-creating code appears in the page's HTML. In other words, it's possible to have a layer appear near the bottom of the page, whose actual code may be the first line inside the body of the page (see Figure 12-3).

Click the shield icon to select the layer. Note, however, the difference from the selection handle (described next): When you drag a layer marker, you don't move the layer in the page layout. Instead, you reposition the layer's code in the HTML of the page.

That quirk can be tricky. For instance, be careful not to drag a layer marker (which represents the HTML code) into a table. Putting a layer inside a table can cause major display problems in some browsers. In Netscape 4, the layer's contents may not appear at all.

That said, you *can* draw a layer so that it *overlaps* a table, or even appears to be inside a cell; just make sure the gold layer marker itself is not inside a cell. If you use the Layer tool to draw a layer (page 371), you avoid this problem completely, since Dreamweaver won't put the code in a cell.

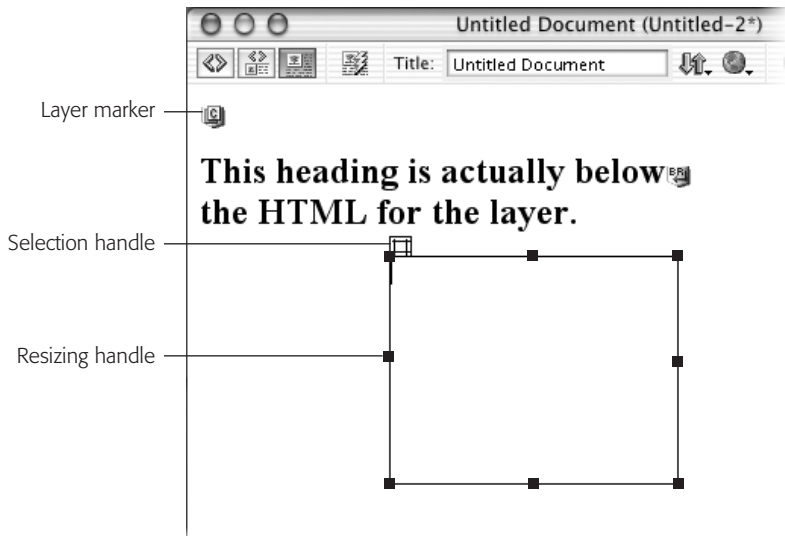
Tip: The layer marker takes up room on the screen and can push text, graphics, and other items next to it out of the way. In fact, even the thin borders Dreamweaver adds to tables and layers take up space in the document window, and the space they occupy may make it difficult to place layers precisely. The keyboard shortcut Shift+Ctrl+I (Shift+⌘+I) hides or shows invisible items like layer markers. The Hide All Visual Aids option from the Document toolbar does the same thing (see page 18). It's a good idea to hide visual aids while you're drawing layers.

- **Selection handle.** The selection handle provides a convenient handle to grab and move a layer around the page. The handle appears when you select the layer or when you click inside the layer to add material to it.

- **Layer outline.** A thin, gray, 3-D border outlines each layer. Like the layer marker and selection handle, it's only there to help you see the boundaries of the layer and doesn't appear when the page is viewed in a Web browser. You can turn it on and off by choosing View→Visual Aids→Layer Borders. (When you hide the borders, layer markers remain, but at least hiding borders gives you a quick preview without opening your Web browser.)

Figure 12-3:

Unlike other Web page elements, layers don't appear in the same place on the page as their HTML code. For instance, as shown here, a layer appears below a paragraph of text, while the HTML code for that layer (represented in Design view by the gold shield at top left) appears above the text. While this arrangement helps give layers their versatility, it means you have a little extra work learning how to deal with layers and their onscreen visual aids separately.



Nesting Layers

Later in this chapter, you can read how to animate a layer so that it moves across the screen. But suppose you want a more advanced effect, like a group of layers that move in a synchronized choreography. You could animate each layer independently, of course, or you could harness the power of *nested* layers.

Nesting doesn't necessarily mean that one layer appears inside another layer; rather, it means that the HTML for one layer is written inside the code for another layer. The nested layer itself can appear anywhere on the page (see Figure 12-4). The main benefit of nested layers is that the *parent* layer—the layer containing the HTML of one or more other layers—can control the behavior of its *child* layers.

For example, suppose you create one layer and nest two layers inside it. If you move the parent layer on the screen, the two child layers follow it, which gives you an easy way to move several layers in unison. Furthermore, the parent layer can control the visibility of its children. When you hide the parent layer (see page 384), the nested layers also disappear.

Note: Netscape 4 has big problems displaying nested layers. For example, it often ignores the positioning and visibility you specify. If you need to make your pages compatible with Netscape 4 browsers, it's best to avoid nesting layers or, at the very least, use Dreamweaver's built-in Netscape fix, which is described in the box on page 378.

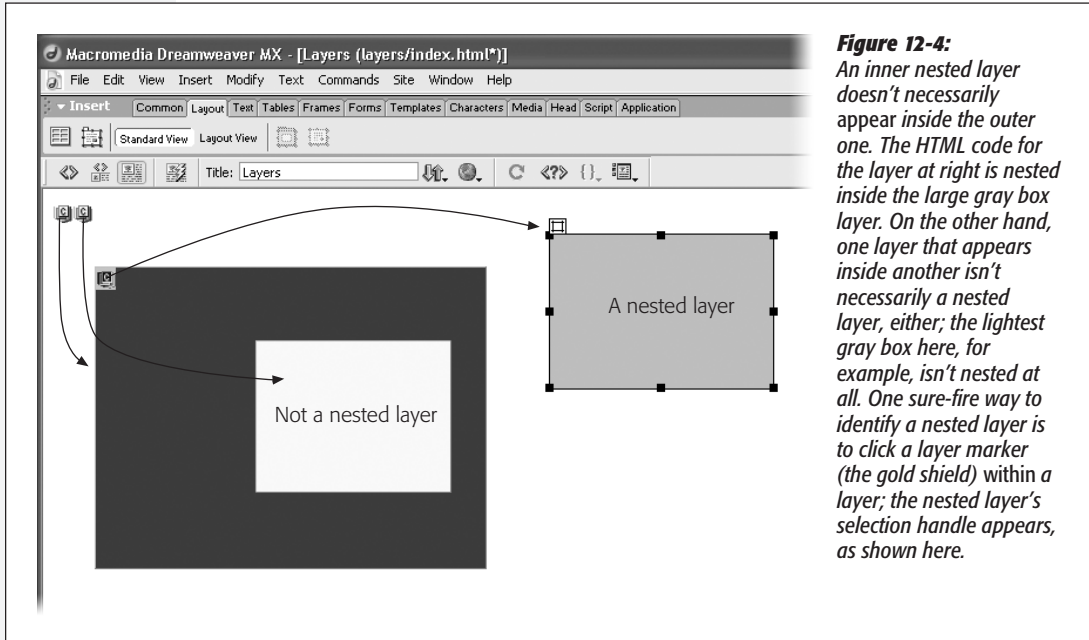


Figure 12-4: An inner nested layer doesn't necessarily appear inside the outer one. The HTML code for the layer at right is nested inside the large gray box layer. On the other hand, one layer that appears inside another isn't necessarily a nested layer, either; the lightest gray box here, for example, isn't nested at all. One sure-fire way to identify a nested layer is to click a layer marker (the gold shield) within a layer; the nested layer's selection handle appears, as shown here.

Here's how to create a nested layer:

- Click inside a layer, and then choose Insert→Layer. You get a new, nested layer inside it.
- Drag the Layer tool from the Insert bar and drop it inside a layer on the page. (Note that this isn't the same procedure described on page 371, in which you click the Layer button and then drag in the document window.)
- While pressing the Ctrl (⌘) key, drag one layer in the *Layers panel* (see Figure 12-5) onto another layer. The layer you drag becomes the child of the layer you drop it on. The nested layer appears indented in the Layers panel, also shown in Figure 12-5. To un-nest a layer, drag it above or below the parent layer in the Layers panel.

The layer marker for a nested layer appears inside the border of the outer layer.

Tip: You can also set Dreamweaver's preferences so that any layer you draw on top of another layer in the document window is automatically nested. Choose Edit→Preferences, click the Layers category, and turn on Nest when Created Within a Layer.

Undoing nested layers

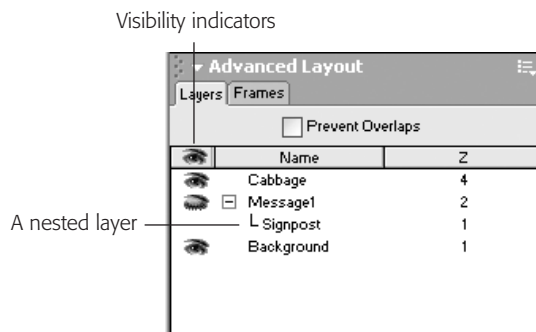
If you later want to un-nest a nested layer, just drag its layer marker to a new spot in the document window—outside of any other layers.

The Layers Panel

The Layers panel helps you manage the layers in a document (see Figure 12-5). To open it, choose Window→Others→Layers, or press F2.

Figure 12-5:

The Layers panel is where you name, reorder, and change the visibility of layers. Turning the Prevent Overlaps checkbox on or off does the same thing as choosing Modify→Arrange→Prevent Layer Overlaps.



The panel lists all layers in the document, and the three columns provide information on each layer:

- **Visibility.** If left to its own devices, Dreamweaver makes the contents of all layers visible on the page. But there are situations where you may want to make a certain layer (and its contents) invisible in your visitors' Web browsers.

The power of the Visibility property is that, using Dreamweaver Behaviors, you can later make the layer visible again, on cue. Imagine a Web page where you've superimposed many hidden layers on a diagram of a car engine. You could set

WORKAROUND WORKSHOP

Converting a Layer Grid to a Table

If the Prevent Overlaps box in the Layers panel is turned on, you won't be able to draw one layer on top of another. Nor will you be able to drag a layer onto or over another layer. Dreamweaver 3 aficionados once exploited this feature to create a layer-based design, assembling various rectangles on the screen to hold the different pieces of the Web page, and then converted the finished result into a table. These Dreamweaver veterans took advantage of the fact that the program can convert each layer into a table cell—but only if the layers don't overlap.

Layout view (introduced in Dreamweaver 4) renders this workaround obsolete (see Chapter 6). But if you're still in the habit of using layers as though they're design tables, turn on the Prevent Overlaps box, draw your page design using the Layer tool, and then choose Modify→Convert→Layers to Tables. Be prepared for some additional labor, however. Tables created this way don't always hold up well after you start adding text and graphics to them; the cells typically expand in ways that ruin the design.

this up so that moving the mouse over a part of the image reveals a layer, complete with text that describes the corresponding engine part. (Page 384 shows you how to create this effect.)

To change a layer's visibility, click in the Eye column next to the layer's name. An open eye indicates a layer is visible; a closed eye, hidden. No eye icon at all represents the factory setting (that is, visible).

Tip: The Property inspector can set a layer's invisibility, too. In fact, one option, Inherit, is available *only* from the Property inspector. If you set the visibility property of a child layer (one that's nested inside another layer) to inherit, it will adopt the visibility settings of its parent. If the parent layer is invisible, the child layer is, too.

- **Layer name.** When you create a layer, Dreamweaver gives it a generic name—Layer1, for example. To provide a more descriptive name, one that will make it easier to remember which layer is which, double-click the layer name and type a new name. (Layer names must start with a letter and can only contain letters and numbers. As Dreamweaver is quick to remind you, spaces and other punctuation aren't allowed.)

Clicking a layer name is another way to select a layer in the document window.

Note: Don't rename a layer if you've already used it in a Dreamweaver behavior such as the Show/Hide Layers action (see page 384). JavaScript uses your layer names to "talk to" the layers. If you change a layer's name in the Layers panel, Dreamweaver doesn't automatically update the name in the JavaScript code in your page. The behavior, therefore, will no longer work. In that case, you'll need to edit the behavior using the new layer name (see page 333).

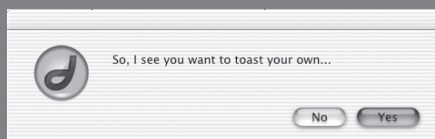
- **Z-Index.** Welcome to the third dimension. Layers are unique in the world of Web elements, because they "float" above (or even behind) a Web page and can overlap each other, completely or partially.

EASTER EGG HUNT

Franchises Still Available. Call Today.

You'll find a surprise hidden in Dreamweaver's Layers panel. Draw a layer on a page, and open the Layers panel (press F2). Double-click the layer's name, and then type *ToastYourOwn*. The dialog box shown here appears.

If you click Yes (and you're online), you'll be taken straightaway to the home page for Toast Your Own, a prom-



ising chain of coffee shops. (The twist to this coffee-shop chain: Instead of having the bozos behind the counter serve you burnt, or, even worse, undercooked toast, you take your coffee and fresh-baked bread, sit down at one of the well-lit tables, and pop the bread into one of the many conveniently situated toast-ers.) Have it your way, indeed!

If you were awake in high school Algebra, you may remember the graphing system in which the X axis (a line pointing to the right) specified where a point was in space left-to-right, and the Y axis specified where the point was vertically. And if you were awake *and* paying attention, you may remember that the Z axis denotes a point's position in *front-to-back* space. When you draw a three-dimensional object on this type of graph, you need to use all three axes: X, Y, and Z.

The Z-Index of layers doesn't make your Web page *appear* three-dimensional; it simply specifies the "front-to-backness" of overlapping layers. The Z-Index, in other words, controls the stacking order of layers on a page, and is represented by the number in the Z column of the Layers panel (see Figure 12-5).

In most cases, the page itself lies behind all layers, and the layers stack up from there. In other words, the higher the layer number, the higher the layer, so that a layer with a Z-Index of 4 appears *behind* an overlapping layer with a Z-Index of, say, 7. However, you can also use a negative Z-Index—for example, -1—to place a layer behind the plane of the Web page. (These numbers have no relation to the actual number of layers on a page. You could have three layers with Z-Indexes of 2, 499, and 2000, if you chose. You'd still just have three layers, one on top of the other in ascending order.)

To change the Z-Index of a layer, click the number in the Z column and type another number. Software veterans will find that Dreamweaver's Layers panel works just as it does in Photoshop or Fireworks: you can drag a layer's name up or down the list to the desired position. The layer at the top of the list (highest number) is in front of all other layers, while the layer at the bottom of the list (lowest number) appears behind all other layers.

Modifying Layer Properties

Once you've drawn a layer, it isn't locked down on the page. Using the Property inspector, you can rename it, resize it, move it, align it with other layers, and set many other properties.

But first, you need to select the layer using one of these methods:

- Click the layer's name in the Layers panel (see page 375).
- Click the layer's selection handle (see Figure 12-4).
- Click the layer's border.
- Click the marker that indicates the HTML code for the layer (see Figure 12-4).

And if that isn't enough ways to select a layer—Macromedia's programmers never sleep—you can also Shift-click a layer. This technique also lets you select multiple layers, so that you can set the properties of (or align) many layers at once. If you're working in a layer or have a layer selected, Shift-clicking another layer selects them both. You can continue to Shift-click to select additional layers. (Shift-click a second time to deselect a selected layer.)

Resizing Layers

When you select a layer, eight handles appear around the edges of the layer (see Figure 12-4). You can drag any of these handles to change the layer's dimensions. The corner handles resize both the width and height simultaneously.

You can also use the keyboard to resize a layer. First select the layer, and then do one of the following:

- Press the Ctrl (⌘) key and press the arrow keys to change the layer's size by one pixel. The up and down arrow keys adjust the layer's height; the left and right arrows affect its width.
- To change the size *ten* pixels at a time, press Shift+Ctrl (Shift+⌘) and press the arrow keys.

For better precision, use the Property inspector to set an exact width and height for the layer (see Figure 12-6). Type a value in the W and H boxes to change the width and height of the layer, respectively. You can specify any unit of measurement that Cascading Style Sheets understands: px (pixels), pc (picas), pt (points), in (inches), mm (millimeters), cm (centimeters), em (height of the current font), ex (height of current font's x character), or % (percentage). To do this, type a number *immediately* followed by the abbreviation for the unit. For example, type *2in* into the W box to make the layer 2 inches wide.

FREQUENTLY ASKED QUESTION

The Case of the Collapsing Layers

When I preview a page with layers inside Netscape 4, the layers collapse and change size when I resize the browser window. How do I prevent this?

Ahh, Netscape 4: the bane of Web designers.

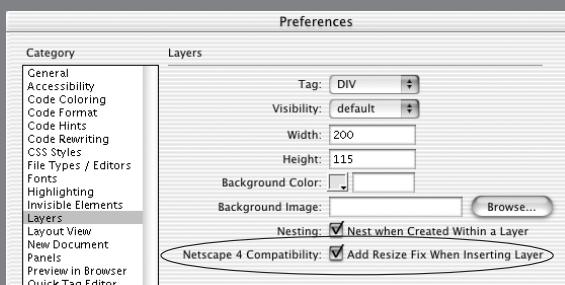
Due to a bug in that program, resizing the browser window can cause layers to change size and even disappear from the screen. To conquer this problem, Dreamweaver supplies a command that forces Netscape 4 browsers to reload the page whenever the window is resized, redrawing the layers correctly in the process.

To add this command to your page (which is only necessary if it contains layers), choose Commands→Add/Remove Netscape Resize Fix. Doing so inserts a small JavaScript program in the page, supplying the resize fix. (You

can use the same command to remove this JavaScript from your page if you've removed layers entirely. Why weigh down your Web page with JavaScript that it doesn't need?)

You can also make Dreamweaver insert

this aptly named command *automatically* whenever you draw a layer. Choose Edit→Preferences to open the Preferences window. Click the Layers category and turn on the Add Resize Fix box.



Another benefit of using the Property inspector is that Dreamweaver lets you resize multiple layers at once. Shift-click two or more layers to select them, and then type new widths and heights. Dreamweaver sets all selected layers to these same dimensions.

Note: If the Prevent Overlaps feature is enabled (see Figure 12-5), you can't drag any of a layer's resize handles over another layer. In other words, layers can't be resized to overlap other layers *when dragging*. But if you use the Property inspector to change the dimensions of a layer, Dreamweaver *always* allows overlaps.

Moving Layers

Moving a layer is just as simple as resizing. Drag any border or the layer's selection handle (shown in Figure 12-4). (Avoid the eight resize handles, which change the size of the layer when dragged.)

For less speed but greater precision, you can move a layer using the keyboard. First select the layer and then do one of the following:

- To move a layer one pixel at a time up, down, left, or right, press the corresponding keyboard arrow key.
- Press Shift while using an arrow key to move a layer ten pixels at a time.

As you'd guess, you can also control a layer's placement using the Property inspector (see Figure 12-6). Dreamweaver measures a layer's position relative to the left and top edges of the page (or, for nested layers, from the left and top edges of the parent layer). The Property inspector provides two boxes for these values: L specifies the distance from the left edge of the page to the left edge of the selected layer; T specifies the distance from the top edge of the page to the top of the selected layer.

To position a layer using the Property inspector, select the layer, using any of the methods described on page 377, and type distances in the L and T boxes. You can use any of the units of measurement mentioned previously. You can even use negative values to move part or all of a layer off the page entirely (offstage, you might say), which is something you'd do if you intended a subsequent animation to bring it *onstage*, into the document window (see page 390).

For example, if you drew a 100-pixel-tall and 50-pixel-wide layer, you could move it to the very top-left corner of the page by selecting it and typing 0 in both the L and T boxes. To position that same layer so that it's just off the left edge of the page, type *-50px* in the L box.

Tip: You can't move a layer completely off the screen by dragging it. If you try, Dreamweaver rudely snaps the layer back to its previous position when you release the mouse. To completely move a layer out of sight, you must use the keyboard or Property inspector.

Aligning Layers

At times you may want to align several layers so that their left, top, bottom, or right edges line up with each other. Dreamweaver's Align command will do just that; it can even make the width and height of selected layers the same.

The layer you select *last* dictates how Dreamweaver aligns the layers. For example, say you have three layers—A, B, and C, and select them in order from A to C. You then align them to Left. Dreamweaver uses the left edge of layer C (the last one you selected) as the value for the other layers.

To use this feature, select two or more layers (by Shift-clicking them), choose Modify→Align, and then select one of the following options from the submenu:

- **Left** aligns the left edges of all selected layers. In other words, it gives each layer the same L property.
- **Right** aligns the right edges.
- **Top** aligns the top edges, so that the T properties are all set the same.
- **Bottom** aligns the bottom edges of the layers.
- **Make Same Width** sets the width of all selected layers (the W box in the Property inspector) the same. **Make Same Height** does the same for the height of the layers.

Layer Properties

Dimensions, Z-Index, and positioning aren't the only aspects of layers you can adjust using the Property inspector. To see the other options, first select a layer using any of the techniques described on page 377—click its name in the Layers panel, for example—and then inspect the Property inspector (Figure 12-6)

FREQUENTLY ASKED QUESTION

Decoding DHTML

I've heard people talk about DHTML. What is it, and how is it different from HTML?

DHTML, or Dynamic HTML, is a combination of Web technologies that, among other things, let you animate elements on a page. You can hide (and then show) text, graphics, and other objects, and even make an object draggable within your browser window (imagine a Web page that's a functional jigsaw puzzle). HTML, JavaScript, and Cascading Style Sheets make these kinds of effects possible.

HTML, of course, provides the framework and content for any Web page. It includes the tags that let you insert tables, graphics, and text. Cascading Style Sheets provides exact pixel-level positioning of content on a page (it's what makes Layers possible). Finally, JavaScript (the programming language behind Dreamweaver Behaviors) brings the D to DHTML by providing interactive controls for the page's elements, including layers' properties. In short, DHTML is nothing more than the use of these three Web technologies to produce interactive and dynamic Web pages.

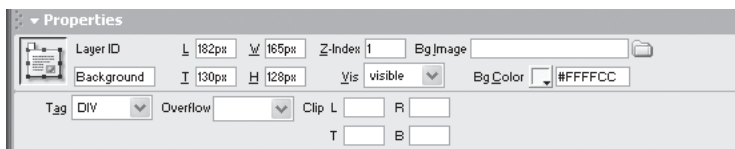
Background image and color

You can set a layer's background in the same way you would for a table or table cell. To add a background image to the layer, click the folder icon next to the Bg Image field, and then select an image from your site folder. As usual, Dreamweaver tiles the image, if necessary, until the entire layer is filled with repeating copies of the graphic.

Setting a background color is even easier. Just use the Bg Color box (see page 34) to select a color or sample a color off the screen.

Figure 12-6:

You can set most layer properties in the Layers panel—but the Overflow and Clipping properties are available only here.



Tag

Information about the size, position, visibility, and other properties of a layer is, behind the scenes, described using Cascading Style Sheets, but it's actually stored in an HTML tag within the page. The Tag pop-up menu lets you choose which kind of tag you'll want to store your layer's properties. (Here's another example of Dreamweaver's over-achieving excess: two of the tags work only in a single browser version. In real life, you'll only use one of these options: the DIV tag.)

- **DIV** is the best choice. A `<div>` tag indicates a block-level element, like a paragraph or header. But unlike other block-level elements, the `<div>` tag has no intrinsic formatting—it's an empty vessel waiting to be filled with formatting information (in this case, layer properties).
- **SPAN** is used for formatting chunks of text *within* a paragraph—a few words on a line, for example. Although using the `` tag works with layers, the block-level `<div>` tag is a more logical choice, since a layer really is like a block, sitting on the page in all its square glory.
- The **LAYER** and **ILAYER** options work only in Netscape Navigator 4. Navigator 6 doesn't even recognize them. Consider these tags refugees of the browser war—gone and soon to be forgotten.

Overflow

Suppose you draw a square layer, 100 x 100 pixels. You fill it with a graphic that's 150 x 162 pixels—that is, larger than the layer itself.

You've already seen how a table cell reacts to this situation: it simply grows to fit the content inside it. Layers, however, are more (or less) flexible, depending on your choice of Overflow option in the Property inspector. These choices let you decide how browsers handle the excess part of the image:

- **Visible** makes the layer grow to accommodate its contents. This is the default setting.
- **Hidden** chops off the excess. In the example, only the top-left 100 x 100 pixels of the image are visible.
- **Scroll** adds scroll bars to the layer, so that a visitor can scroll to see all of the layer's contents. This feature offers an interesting way to add a small, scrollable window within a Web page; it's like a frame, but without requiring a frameset. Imagine letting visitors scroll and read through a small "Latest Company News" box, without disturbing anything else on the page. Unfortunately, this option doesn't work in Netscape 4, OmniWeb, or Opera.
- **Auto** adds scroll bars to a layer *only* if necessary to accommodate its oversize contents. This feature doesn't work in Netscape 4, OmniWeb, or Opera, either.

Dreamweaver can display only the Visible option. If you want to see the effect of any other Overflow setting, you must test the effect in a Web browser (see Figure 1-17).

Note: Various Web browsers handle the Overflow property differently. For example, Netscape Navigator 4.73 for Windows can't display scroll bars; the Mac version of Internet Explorer 5 often doesn't display the contents of a layer at all when the Overflow option is set to scroll. Test your design thoroughly if you use the Overflow setting.

Clip

The Clip property can hide all but a rectangular piece of a layer (see Figure 12-7). In most cases, you should avoid this property; not only is it rarely useful, but it's also a waste of precious bandwidth.

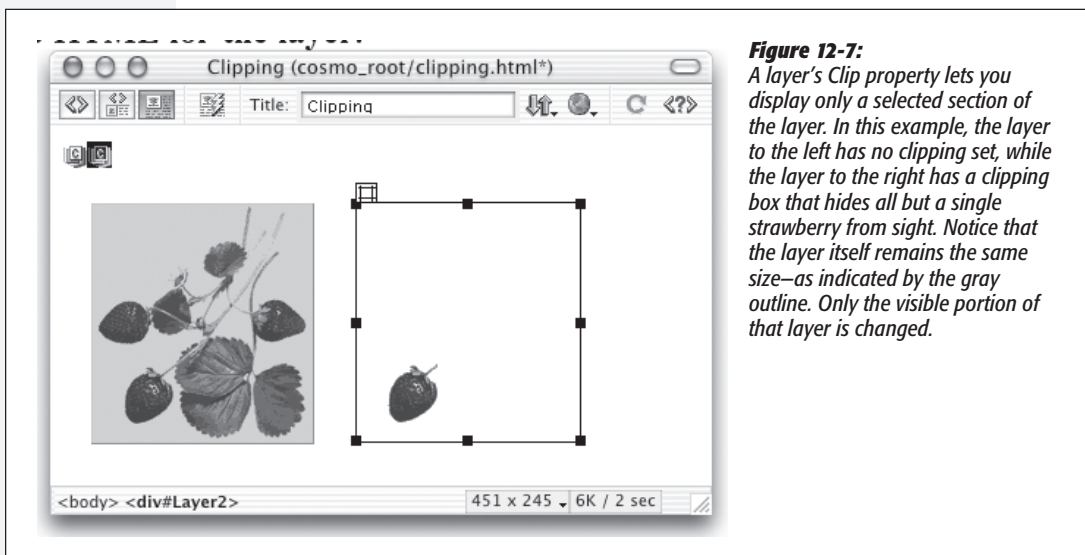


Figure 12-7:
A layer's Clip property lets you display only a selected section of the layer. In this example, the layer to the left has no clipping set, while the layer to the right has a clipping box that hides all but a single strawberry from sight. Notice that the layer itself remains the same size—as indicated by the gray outline. Only the visible portion of that layer is changed.

For example, say you put a large graphic into a layer, but only wanted to display one small area—like the single strawberry shown in Figure 12-7. You could use the Clip property, but the Web browser still has to download the *entire* graphic—not just the clipped area. You’re much better off just preparing the smaller graphic at the right size to begin with (see Chapter 5). The kilobytes you save may be your own.

(In theory, you could use JavaScript to *move* the clipping area, creating an effect like a spotlight traveling across the layer. Although that might be a more useful purpose for the Clip property, Dreamweaver unfortunately offers no tools for doing it.)

If you’re not convinced, and you still want to clip a layer in Dreamweaver, here’s a sure-fire technique:

- 1. Click inside a layer whose contents you wish to clip.**

The layer should already contain an image.

- 2. Choose Insert→Layer.**

Dreamweaver adds a nested layer. You’ll use this layer to determine the coordinates of the clipping box.

- 3. Drag and resize the nested layer until it exactly covers the part of the layer you wish to show.**

This is easy to do, because Dreamweaver lets you see the contents of the underlying layer. In Figure 12-7, a nested layer was positioned and sized so it precisely covered the strawberry. For better precision, hide all invisible elements in the page (View→Visual Aids→Hide All).

- 4. Select the nested layer and note its L, T, W, and H properties, which you can read in the Property inspector.**

You can write them on scrap paper, for example. These numbers will let you calculate the exact dimensions of the clipping box.

- 5. Delete the nested layer.**

You needed it only to get the measurements in step 4.

- 6. Select the first layer and fill in the Clip boxes in the Property inspector, using the numbers from the nested layer as a guide.**

In the Clip’s L box, enter the nested layer’s L value; in the T box type the T value you wrote down in step 4. Add the nested layer’s L and W values and type the result in the R box. Finally, in the B box, type the total of the T and H values you wrote down in step 4.

Only the area covered by the nested layer now appears.

Hiding and Showing Layers

Do you ever stare in awe when a magician makes a handkerchief disappear into thin air? Now you, too can perform sleight of hand, right on your very own Web pages, making layers disappear and reappear with ease. Although it's not magic, Dreamweaver's Show-Hide Layers behavior is undoubtedly a nifty piece of JavaScript programming.

Show-Hide Layers takes advantage of the Visibility property of layers on your page. You can use it for things like adding pop-up tooltips to your Web page, so that when a visitor's mouse moves over a link, a layer appears with a more detailed explanation of where the link goes (see Figure 12-8).

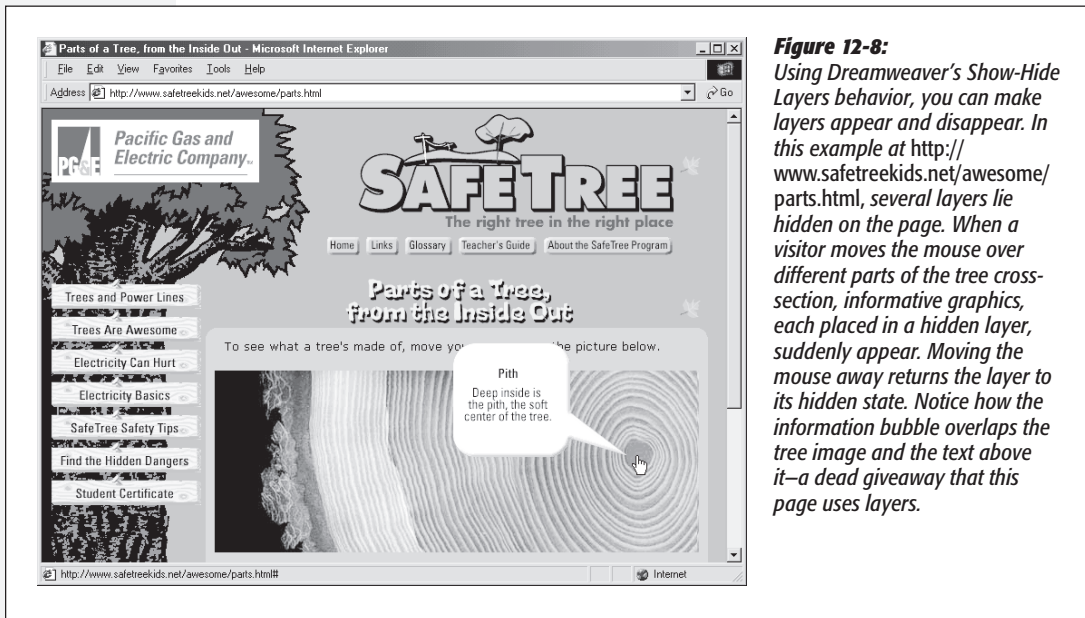


Figure 12-8: Using Dreamweaver's Show-Hide Layers behavior, you can make layers appear and disappear. In this example at <http://www.safetreekids.net/awesome/parts.html>, several layers lie hidden on the page. When a visitor moves the mouse over different parts of the tree cross-section, informative graphics, each placed in a hidden layer, suddenly appear. Moving the mouse away returns the layer to its hidden state. Notice how the information bubble overlaps the tree image and the text above it—a dead giveaway that this page uses layers.

The following steps show you how to create this remarkable special effect. Note, however, that the process requires some familiarity with Dreamweaver Behaviors, which are described in Chapter 11. For example, there you'll find out that behaviors are special effects that require you to specify an *event* (something your visitor does that triggers the effect) and an *action* (the effect itself), and that you must attach a behavior to a specific *tag*.

1. Add layers to your Web page using the techniques described on page 371. Use the Visibility setting (page 375) to specify how you want each layer to look when the page loads.

If you want a layer to be visible at first, and then to disappear when your visitor does something specific, set the layer to Visible. If you want it to appear only after some specific event, set it to Hidden.

2. In the tag selector, click the tag to which you want the behavior attached.

Web designers often attach behaviors to link (<a>) tags. But you can also attach them to images or, as in Figure 12-8, to an image map (see page 124), which defines hotspots on a single graphic. To create this effect, you'd attach two behaviors to each hotspot in the document window (that is, to each <area> tag in HTML): one to show the layer, using the onMouseOver event, and one to hide the layer, using the onMouseOut event.

Note: If this is all Greek to you, see page 124 for more on image maps and hotspots, page 330 for more on attaching behaviors to tags, and page 335 for details on event types.

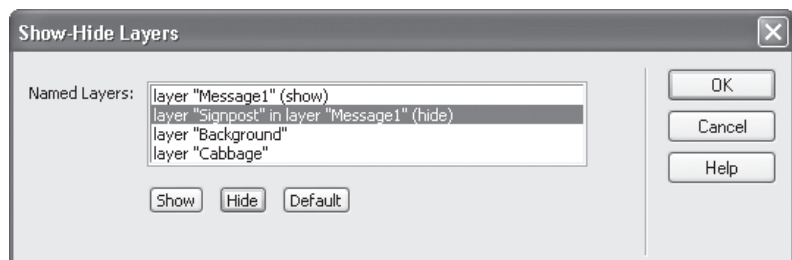
3. If it isn't already open, choose Window→Behaviors to open the Behaviors panel.

The Behaviors panel (as pictured in Figure 11-1) appears. It lets you add, remove and modify behaviors.

4. Click the + button on the panel. Select Show-Hide Layers from the menu.

The Show-Hide Layers dialog box appears (see Figure 12-9). You'll use this box to tell Dreamweaver what layer you intend to work with first.

Figure 12-9:
The Show-Hide Layers box lets you control multiple layers at once. In this example, the Message1 layer is set to appear; the Signpost layer Signpost will vanish when the behavior is triggered.



5. Click a layer in the list of named layers.

Here's an example of why it's useful to give your layers descriptive names. It's difficult to remember which layer is which when all have the Dreamweaver default names (Layer1, Layer2, and so on).

6. Choose a Visibility setting for the layer by clicking one of the three buttons, Show, Hide, or Default.

You're now determining what will happen to the layer when someone interacts with the tag you selected in step 2. Show makes the layer visible, Hide hides the layer, and Default sets the layer's Visibility property to the browser's default value (which is usually the same as the Inherit value described on page 376).

The choice you selected appears in parentheses next to the layer's name, as shown in Figure 12-9.

7. If you like, select another layer and apply another visibility option.

A single Show-Hide Layers action can affect several layers at once. A single action can even make some visible and others invisible. (If you apply an action to a layer by mistake, select the same option again to remove it from the layer.)

8. Click OK to apply the behavior.

The Show-Hide Layers action is now listed in the Behaviors panel, as is the event that triggers it. For more information on using and setting events, see page 335.

Once you've added Show-Hide Layers, you can preview the behavior in a Web browser (Dreamweaver can't display behaviors by itself). As with other Dreamweaver Behaviors, you can edit or delete this action; see page 333.

Creating Draggable Layers

For a truly interactive Web experience, you can create *draggable* layers that let your visitors rearrange Web page elements themselves. Imagine taking last year's Christmas photo and turning it into a Web-based picture puzzle, which your kids and friends can try to piece together. You could even create a magnetic poetry page, where visitors can drag words around the screen to create their own stream-of-consciousness rants.

Dreamweaver's Drag Layer behavior lets you free a layer from its normally sedentary existence. You can control how the layer is dragged, make it snap into a predefined position, and even have it trigger other exciting JavaScript commands.

Once again, you'll have to slog through Chapter 11 to learn something about Behaviors before proceeding. Once you've grasped the concepts of events, actions, and attached HTML tags, you're ready to begin.

Start by adding a layer to a Web page, using the techniques described on page 371. You may want to give it a name that fits—*puzzle1*, for instance.

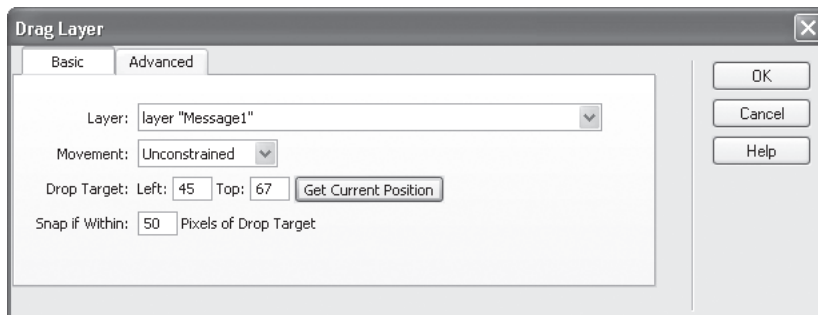
You must now attach a behavior to an HTML tag (see page 331). Very often, you'll add this behavior to the `<body>` of the page, so that the Drag Layer behavior makes the layer draggable right when the page loads.

If the Behaviors panel isn't on the screen, choose Window→Behaviors. From the + menu on the panel, choose Drag Layer to make the Drag Layer dialog box appear (see Figure 12-10). Fill it out like this:

- **Layer.** Select the layer you want to manipulate. You can only select one layer per Drag Layer action. If you want to make several layers draggable, you'll have to apply this behavior once for each layer. (The exception is nested layers, in which case you add the Drag Layer behavior to the parent layer. When your visitor drags that layer, the nested layers follow along.)
- **Movement.** You can control where the layer can be dragged by selecting one of two options from the Movement menu:

Unconstrained puts no limits on the layer. Visitors can freely drag the layer anywhere on the page; they can even drag most of the layer past the edges of the browser window. **Constrained** lets you limit the area the layer can move in. Four fields—Up, Down, Left, and Right—define the limits of the drag area. Each field accepts a pixel value that indicates how far in a particular direction the layer can move.

Figure 12-10:
The Drag Layer dialog box lets you set many different properties for a draggable layer, including setting a Drop Target—a location on the page where the layer is supposed to end up.



For example, suppose you've put a layer smack-dab in the middle of the window. If you type 50, 20, 100, and 150 in the Up, Down, Left, and Right boxes, visitors will be able to drag the layer no more than 50 pixels up, 20 pixels down, 100 pixels to the left, and 150 pixels to the right. Leaving a field blank means there's no constraint in that direction. For example, if you leave the Up field empty, visitors will be able to drag the layer all the way to the top (and almost out) of the browser window.

Tip: If you want to limit a layer's movement so it can only move left and right (like a slider on a control panel), choose Constrained from the Drag Layer dialog and type 0 in both the Up and Down boxes. To limit its movement to up and down—like an elevator—type 0 in both the Left and Right boxes.

- **Drop Target.** Setting a Drop Target is optional. But it can be useful when your goal is to have visitors drag the layer to a *specific place* on the page. For example, you could create a jigsaw-puzzle Web page where each piece of the puzzle is placed in its own layer. When the page loads, all of the pieces are spread around the page, and your visitor's challenge is to put the pieces together. Each puzzle piece must go in a specific place, so each layer gets its own drop target. (This option works well with the Snap option described next. It can also trigger *another* JavaScript program, as described below.)

The value in the Left field represents the distance, in pixels, from the left edge of the browser window to the top-left corner of the layer. The value in the Top field is the distance from the top of the browser window to the top-left corner of the layer. For example, say you want the top-left corner of the layer to end up 50

pixels from the left of the browser edge and 100 pixels down from the top; in this case, you'd type *50* and *100* in the Left and Top boxes, respectively.

Note: When you're using nested layers, the Top and Left values refer to distances relative to the Top and Left positions of the parent layer. For example, say you've nested a layer inside of another layer whose top margin is 50 pixels from the top of the page and whose left margin is 100 pixels from the left edge of the page. If you add a drop target to a nested layer, and set the Top and Left values to 20 and 30, the *actual* location of the drop target on the page will begin at 70 pixels from the top of the page and 130 pixels from the left edge of the page.

To help you figure all this out, the Get Current Position button calculates the current coordinates of the layer on the page. This may not seem so useful: After all, why would you want to create a drop target in the first place, if the layer is already there?

But the trick is to start by moving the layer you want to make draggable to the position on the page where you'll want it to *end up* (that is, where the visitor should drag it). Then apply the Drag Layer behavior and *then* click the Get Current Position button. Later, after you've finished setting the other properties and clicked OK, you can move the layer to its *starting* position (where it will appear before the visitor drags it).

- **Snap if Within.** One problem with the Drop Target feature is that the drop area is marked by a *single pixel* on the page. Dragging a layer *exactly* to that spot would require that your audience have the patience of Job and the hand of a neurosurgeon.

Fortunately, you can bend your visitors in the right direction with the help of the Snap if Within option. When a visitor drags the layer within a certain distance of the drop target, this option makes the layer snap right into place. If you type *100*, for example, when a visitor drags the layer and releases the mouse button when the layer's upper-left corner is within 100 pixels of the drop target, that's close enough for government work; it will immediately pop into place.

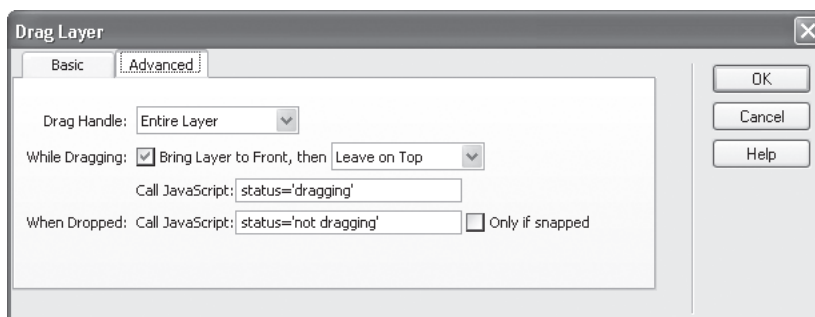
The previous settings are all you need to create a basic draggable layer. You can click OK at this point to close the dialog box and apply the action. But if you want to give your draggable layer even more sophisticated and professional features, click the Advanced tab to set additional properties (see Figure 12-11).

- **Drag Handle.** By default, Entire Layer is selected, meaning that a visitor can click *anywhere* on the layer to drag it. But in some cases, you may want to require visitors to click a specific portion of the layer—a handle—in order to drag the layer. For example, perhaps your layer contains a picture of a tool box. You could define the part of the picture with the tool box's handle as the layer's drag handle.

Choose Area Within Layer from the Drag Handle menu to define the handle area. Four fields (L, T, W, and H) appear on the Advanced tab. You specify the

draggable area relative to the layer itself. L represents the distance from the left edge of the layer, T the distance from the top of the layer, and W and H represent the width and height of the handle.

Figure 12-11:
Here, a JavaScript statement (`status='dragging'`) shows the word dragging in the browser's status bar when someone drags the layer—and the words not dragging when the layer is released.



- **While Dragging.** As discussed on page 376, layers can overlap each other in a stack. A layer's Z-Index determines where it belongs in the stacking order of the page. By default, the Bring Layer to Front option is turned on, so that the layer doesn't get hidden behind other layers as someone drags it around the page. If you want to leave the layer behind other layers as it's dragged, turn off this option.

Also, you can control whether the layer stays on top or returns to its place in the stacking order when it's dropped after dragging. The Leave on Top option is selected by default, meaning that when the visitor drops the layer, it stays on top. In fact, it jumps to the very top Z-Index level of the page, above even the layers it *doesn't* actually overlap. (If you turned off Bring Layer to Front, this option has no effect.)

If you want to return the layer to its original level in the stacking order, choose "Restore z-index." Now the layer can appear on top while it's being dragged, but once released, it returns to its original order.

- **Call JavaScript.** These final settings are fun and powerful, but require solid knowledge of JavaScript. The first Call JavaScript box is where you type a JavaScript command or *function call* that you want to run while the layer is dragged. The second box lets you specify a command or function that's called when the layer is dropped.

Turn on "Only if snapped" if you want the command to run only if the layer is dropped on a target. For example, you could make a dialog box that says "Bullseye!" appear when your visitor drops a layer directly over a target on the page. For another example of these options, see Figure 12-11.

Once you've added your fancy new behavior, you can test it by pressing F12 and previewing it in a Web browser. As with any other behavior, you can edit the Drag Layer behavior using the instructions on page 333.

Animating Layers

Nobody looks at banner ads anymore, but how about a banner ad that flies across the top of the page—towed by a tiny airplane graphic? The latest crop of Web browsers lets you move layers around the screen to produce exciting animated designs.

This kind of dynamic behavior generally requires a deep knowledge of JavaScript and Cascading Style Sheets, as well as the experience and patience to deal with the differences between the various browser brands.

All of the programming skill and Web development experience needed to create animations is built right into Dreamweaver. With Dreamweaver's Timeline tools, you can create elaborate and complex animations, and even time-based actions like automated slide shows.

Tip: If you've used Macromedia's animation-driven programs, Flash and Director, picking up Dreamweaver's tools is a snap. Dreamweaver uses an animation interface very similar to those programs'.

Understanding Animation

Programming animation requires that you specify two things: *movement* and *time*. Imagine a ball moving across the screen; it takes the ball two seconds to travel from the left side to the right. A Web browser creates animation by drawing the ball in several different positions over several fractions of a second, so that you see the effect of smooth motion across the screen.

Each of these drawings occurs in a moment of time, referred to as a *frame*—the fundamental building block of computer (or Disney) animation. A collection of frames makes up a *timeline*. Think of a timeline as a strip of movie film where each frame in the filmstrip contains one picture. When the strip is played back from beginning to end, you have a movie.

A Dreamweaver timeline can play back either when the page first loads or when your visitor does something that you specify. For instance, you can add a button to a page that, when clicked, plays an animation on the screen.

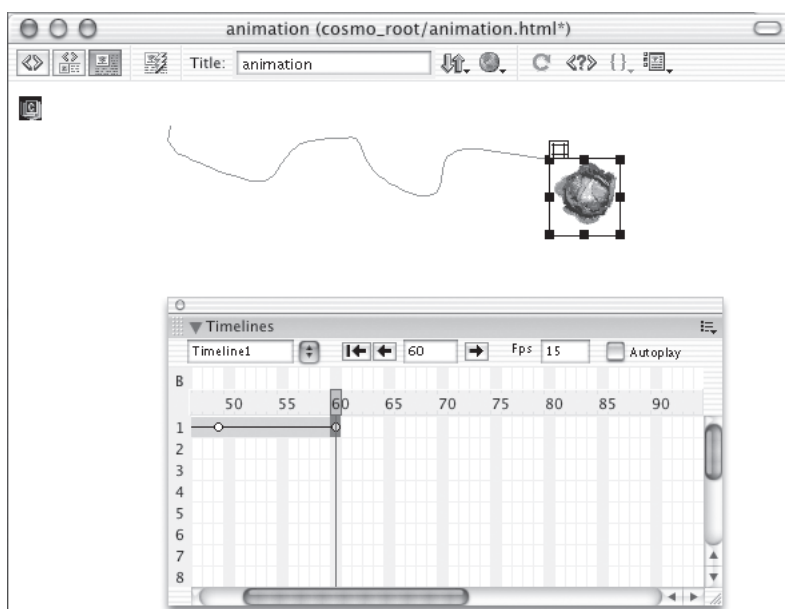
Animation The Easy Way

To create an animation, you'll place a graphic into a layer, and then direct that layer to move around the Web page, carrying the image on its back. Animating a layer involves some very sophisticated JavaScript programming code. In fact, the code required to animate a layer can take up more lines of code than the actual HTML of the page. Trying to create such a program yourself could take weeks. But Dreamweaver can do it in seconds by recording the movement of your mouse as you drag a layer around the document window.

To draw an animation on the screen, select a layer to animate, using one of the techniques described on page 371. Now choose Modify→Timeline→Record Path of Layer. The Timelines panel appears, and Dreamweaver is ready to record your animation. (The Timeline feature is described in detail on page 392.)

Grab the layer by its selection handle or border and drag around the page. A trail of gray dots follows your cursor, indicating the path your animation will follow. Dreamweaver doesn't record the timing of your drag, just the path, so take your time to make sure that the motion is exactly what you want. You'll specify the speed of the animation later, as described in Figure 12-12.

Figure 12-12:
The easiest method of creating an animation simply requires you to drag a layer along the route you want the animation to take. Dreamweaver can record this path and save it as an animation.



When you release the mouse, a particularly chatty dialog box appears. It tells you that you can animate the following layer properties: Left, Top, Width, Height, Z-Index, and Visibility. You'll learn how to do all of this shortly. (By the way, the window also informs you that Netscape Navigator 4—that infernal bottleneck to innovation—*can't* animate the widths and heights of layers.)

Click OK (and, while you're at it, turn on the "Don't show me this message again" box). A gray line appears across the document window, winding its way along the path you just created. Meanwhile, a line with a series of hollow dots appears in the now-open Timelines panel, as shown in Figure 12-12.

If you turn on the Autoplay box (shown in Figure 12-12), your animation will play as soon as the page loads. This is a common choice, since it plays your breathtaking

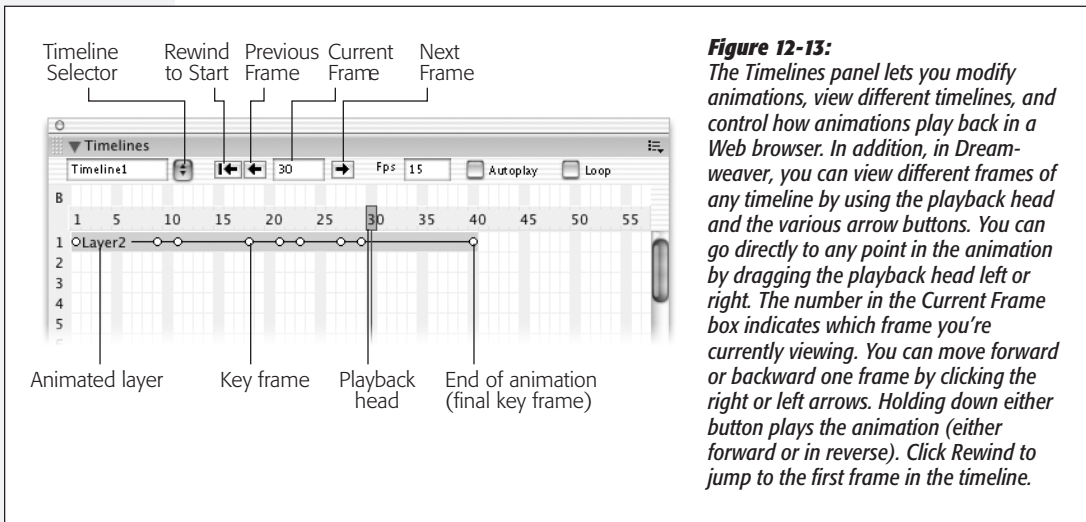
animation immediately upon your visitor’s arrival. You can, though, start the animation by other means using the Play Timeline behavior, described on page 400.

Also, if you want to repeat your animation over and over again—perhaps making an animated bee fly incessantly around your page, in hopes of distracting your visitor from studying your site’s privacy policy—turn on the Loop box.

Tip: Because looping immediately jumps from the end of the animation to the beginning, make sure whatever you’re animating starts and ends at roughly the same place on the page. Otherwise, it will look as if the layer suddenly disappeared from one area of the page and then reappeared somewhere else.

At this point, you can press F12 to preview your animation in a browser (make sure you selected the Autoplay option). You can also preview it right in the document window using the Timelines panel (see Figure 12-13). Click the Rewind button, and then click and hold the Forward button; Dreamweaver plays each frame of the animation. Or grab the playback head and drag it back and forth to move backward and forward through the animation.

Once you’ve added an animation to the timeline, you can edit many of the animation’s properties, such as its speed or movement. (See “Animating with key frames” on page 394.)



Understanding Timelines

The Timelines panel is the control center for your Dreamweaver animations (see Figure 12-13). Choose Window→Timelines to open it, or press Alt-F9 (Option-F9).

Note: Timelines, frames, key frames, and other terms associated with Dreamweaver’s animation tools are not a part of HTML, JavaScript, or CSS. There’s no tag called *key frame* and no JavaScript command called *play*. Dreamweaver’s Timelines panel and animation capabilities are the result of sophisticated programming on the part of the program’s engineers, and as such, are specific to Dreamweaver.

The bottom half of the panel displays numbered rows called *channels*, which denote individual layer animations. For example, in Figure 12-14, a single animation sits in channel 1, represented by the solid color bar with a line running through it (called the *animation bar*). The numbers along the top of those rows indicate the frames, showing that the animation bar pictured here is 40 frames long. Since a frame is an individual drawing of a layer at a specific time and position, a Web browser would move the layer 40 times to complete this animation.

You can add multiple animations to a timeline, too, so that two or more layers move simultaneously across the screen. Each of those animations would appear in its own channel in the Timelines panel.

While the number of frames in a channel determines the number of times the Web browser will move the layer, it doesn’t directly dictate the *speed* at which the animation plays. The speed is determined by the *frame rate* shown in the Fps (frames per second) box. By default, the timeline’s frame rate is 15 fps. In other words, it takes one second to play 15 frames. The sample 40-frame animation in Figure 12-13 would thus take about 3 seconds to play back. If you decreased the speed to 8 fps, the same animation would take longer to play (around 5 seconds).

The lower the frame rate, the more the animation stutters; the higher the rate, the smoother the animation. Compared to a feature film’s rate of 24 fps, the default rate Dreamweaver supplies may appear low. However, it’s wise to stick with the supplied 15 fps, since redrawing layers is a complex process that requires a lot of power from the Web browser (and the computer it’s running on). You can specify a higher frame rate, but a Web browser may not be able to obey. In order to draw each frame, it may need to slow the animation down.

Tip: Although it’s possible to tell Dreamweaver to animate, say, 17 different layers at a frame rate of 36 frames per second, you probably won’t see the effect you want. In fact, most likely, the Web browser will slow to a crawl and your animation will look like it’s moving in slow motion as the Web browser dutifully draws every frame in the timeline, regardless of how long it takes and no matter what speed you specified.

Be careful when creating complex animations. Test them in a variety of browsers, and, if possible, on slower computers. That’s the only way to make sure that your stunning animations don’t wind up resembling paint-drying contests.

Adding a timeline

Dreamweaver automatically creates a timeline when you animate a layer by recording its path. But you can also add a timeline manually by choosing

Modify→Timeline→Add Timeline in the Timelines panel. A new, empty timeline appears, to which you can add layers and create animations.

Adding layers to the timeline

As noted earlier in this chapter, there's an Easy Way to animate a layer—just by dragging it. Unfortunately, at times, you'll find the Easy Way to be less than accurate; as has been noted many times before, drawing with a mouse is like using a bar of soap to paint the Sistine Chapel. Furthermore, you can't create a straight line using this method.

To get around these drawbacks, you can use the Harder But More Precise way: selecting a layer (or several) and choosing Modify→Timeline→Add Object to Timeline.

Tip: A quick way to add a layer to the timeline is to drag it from the document window into one of the Layer channels on the Timelines panel.

When you add a layer, a new animation bar appears in one of the channels of the Timelines panel. The animation bar starts out as a solid blue span of 15 frames (one second) that contains the layer's name and begins and ends with a white dot. To extend the animation's length, drag the white dot in frame 15 to the right. For example, if you wanted to make a 10-second-long animation, you'd drag the dot out to frame 150.

You can also move the entire animation bar by dragging the bar along the timeline—a useful tactic when you want to add a slight delay to an animation, or stagger several different animations in the same timeline. For example, imagine you wanted to make two snowflakes (two layers, each with an image of a snowflake) appear at the top of the browser window and float down the page; but you also want the second snowflake to enter the scene about one second after the other. Drag the animation bar with the second snowflake animation so it begins on frame 16, one second after the first snowflake falls.

Animating with key frames

The white dots in the animation bar, called *key frames*, are your main tool for controlling an animation. In fact, when you add a layer to the timeline by using the Modify→Timeline→Add Object to Timeline command (or by dragging the layer onto a channel), key frames are the *only* way to give the frame a movement path.

Each animation begins life with two key frames, one each for the animation's beginning and ending positions. So far, the layer is in the same position in both key frames. In other words, it doesn't go anywhere when the animation plays.

By adding and manipulating key frames, you can tell Dreamweaver where you want your layer to wind up at certain points in its motion. The program automatically calculates the layer's position in all of the intermediate frames, saving you endless tedium and grief.

For example, on a brand-new animation with only two key frames (beginning and ending positions), click the second key frame, which selects the corresponding layer in the document window. Drag the layer to the spot on the page where you wish the animation to *end* and let go. Now when you play the animation, the layer travels from its starting position to the *new* ending location. Similarly, you can change the beginning position of the layer by selecting the first key frame and dragging the layer.

Tip: For compulsive precision, you can also specify a new position for a layer by clicking the key frame in the timeline and setting the layer's L and T properties in the Property inspector (see page 379).

Adding key frames to a timeline

Of course, you won't get far in life just making your layers fly from point A to point B. If you add more key frames between the starting and ending ones, you can define new spots for your layer-in-motion to hit at certain times as it putters on its way to the ending spot. (In fact, when you create an animation the Easy Way, by dragging a layer around the screen, Dreamweaver automatically generates dozens of key frames, as shown in Figure 12-12.)

To manually add a key frame, click a frame inside the animation (one of the blue frames) in the Timelines panel animation bar—one that's not already a key frame. When you click, the playback head (the red box that appears among the frame numbers) moves to the frame.

Now choose Modify→Timeline→Add Keyframe. A hollow circle appears in the animation bar at the frame you selected. You can also press F6 to add a new key frame at the selected point in the animation bar.

Tip: You can conserve a few precious calories by Ctrl-clicking (⌘-clicking) the frame you wish to turn into a key frame. The cursor turns into a tiny hollow circle and instantly creates a new key frame.

Having created a new key frame, you're ready to specify the layer's new position at this point, confident that Dreamweaver will automatically regenerate its movement from the key frames before and after the one you just added.

Tip: To delete a key frame, select it in the timeline and press Shift-F6, or choose Modify→Timeline→Remove Keyframe.

Modifying layers at key frames

Key frames define the position of a layer at a particular moment in the animation. Once you've created a new key frame, the corresponding layer is selected in the document window; you can then drag it to a new location. When you release the mouse, Dreamweaver redraws the gray path line to indicate the new path the animation follows, leading up to, and away from, your new key frame.

Similarly, you can adjust your moving layer's position at any *existing* key frame just by clicking the corresponding spot in the timeline and then dragging the layer on your screen.

But you can do more than change a layer's *position* at each key frame. You can also change other properties at each spot, like this:

- **Visibility.** Use the Property inspector to set the Visibility property of a layer at a particular key frame (see page 375 for information on setting the Visibility property). You'll therefore make the layer disappear (or reappear) on cue. There's no way to fade the layer out gradually; it's either visible or hidden.

To make a layer disappear and reappear later in the animation, click a key frame and set Visibility to Hidden. Ctrl-click (⌘-click) consecutive frames to create a series of hidden key frames. Change the last key frame to Visible at the point when you want the frame to reappear.

- **Z-Index.** You can also change the stacking order of the layer at a particular key frame. Click the key frame and use either the Property inspector or Layers panel to set the layer's Z-Index (page 376).

Imagine a moon, for instance, flying around a planet. It moves from behind the planet at first, orbits around the front of the planet, and then eventually disappears back behind it. In this example, the planet would be in one layer, the moon in another.

At first, the Z-Index of the planet would be greater than that of the moon. After the moon moves from behind the planet, you would add a key frame, and increase the moon's Z-Index so that it's larger than the planet's, putting the moon layer in front of the planet.

WORKAROUND WORKSHOP

Straight-Line Animation

When an animation has more than one key frame, Dreamweaver always creates a curved path from one key frame position to the next—a real problem if you want to create a straight zigzag motion. There's only one way to create a sure-fire, straight-line path: Create an animation with only two key frames. If you try to introduce a third point between them, Dreamweaver goes right back to curving your path.

The workaround, therefore, involves creating a new animation bar for *each* straight-line motion segment. After adding the layer to the timeline, in other words, define its starting position on the screen using the first key frame. Now click the ending-point key frame, and then define the

ending position of the first straight line (the end of the "zig").

Now you're ready to create another animation bar, which will create the "zag." Click the frame just after the last key frame, select the layer on the screen, and choose Modify→Timeline→Add Object to Timeline. Now that the second animation bar has appeared, you can click *its* first and last key frames, positioning the layer on each.

To create a third straight-line movement, choose Modify→Timeline→Add Object to Timeline *again*, and set the starting and ending positions for *its* key frames. Continue this process until you've added animation bars for each stroke in the zigzag path.

After the moon crosses the face of the planet, you would add another key frame and set its Z-Index back to its original setting—lower than, and behind, the planet.

- **Width and Height.** You can also change the dimensions of a layer at a key frame by changing the W and H fields in the Property inspector (see page 378). The effect is very interesting: Not only does the layer change size when it reaches that key frame, but it automatically and gradually changes size in each frame in between. (Unfortunately, this feature doesn't work in Netscape Navigator 4.)

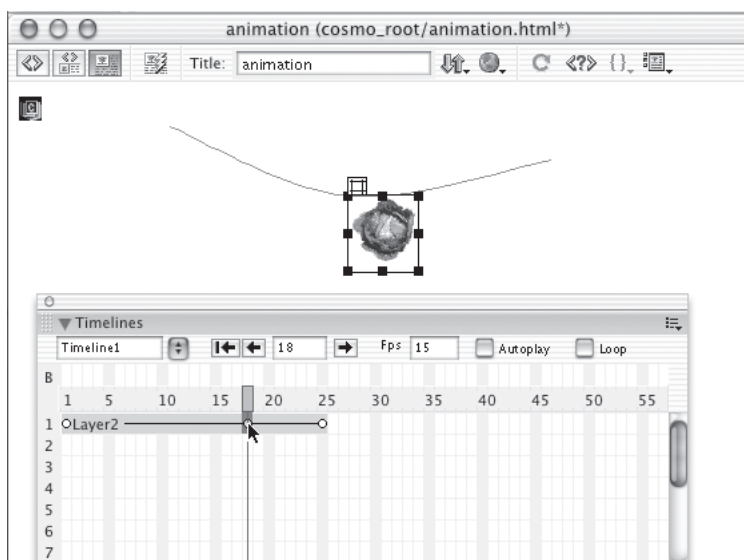
Controlling animation speed using key frames

Once you create a key frame, you can move it in the timeline by dragging it (see Figure 12-14). This is how you control the *pace* of movement between key frames. The more frames between key frames, the slower the movement; fewer frames means faster movement.

For example, in Figure 12-14, a 25-frame animation of a leaf moving along a path has three key frames. The second key frame is selected, showing that the leaf is only about halfway along the path (the gray line). As you can see in the timeline, there are 19 frames from the first key frame to the midpoint. There are only 3 frames, however, from the second key frame until the final one. In other words, it takes about 20 frames (a little over a second) for the leaf to travel halfway along the path. The last half goes much faster—only about 4 frames, or less than 1/4 second.

In this example, the leaf will travel leisurely along the screen, until it reaches the midway mark in its path, and will then scream quickly to its destination. If you drag the middle key frame to the center of the animation bar, the leaf will travel at the same speed throughout the animation.

Figure 12-14:
 You can move any key frame by dragging it in the timeline. To make an animation run longer, drag the last key frame to the right. This increases the total number of frames in the animation. It also spreads out any key frames within the animation bar, making the overall animation slower. To only move the last key frame, and prevent Dreamweaver from redistributing other key frames, press Ctrl (⌘) while dragging the end frame.



The Behaviors channel

Directly above the frame numbers that appear in the Timelines panel, you'll find another row of frames labeled B. It's the Behaviors channel. You can use this channel to trigger a Dreamweaver behavior at a particular frame in the timeline. (See Chapter 11 for the exhaustive, and exhausting, story on Behaviors.)

In fact, you may have already used the B channel without even knowing it. When you turn on the Loop box in the Timelines panel, Dreamweaver inserts a Go To Timeline Frame behavior into the Behaviors channel in the last frame of your animation (see Figure 12-15). This behavior (see page 401) causes the animation to return to the first frame in the timeline and play again.

Suppose you want an alert box with the word "Boom!" to appear at the instant when one animated layer touches another. All you'd have to do is select the frame where the two layers meet, and then add a Pop-up Message action to the Behaviors channel.

Tip: You don't actually have to have *any* animation on the page to take advantage of the Behaviors channel. Say, for example, you want a new browser window to appear exactly four seconds after a Web page loads—a delayed pop-up ad, perhaps. You'd just add an Open Browser Window action to frame 60 in the Behaviors channel, and then turn on the Autoplay checkbox in the Timelines panel.

To add a behavior to the timeline, just click the relevant frame in the Behaviors channel of the Timelines panel—for example, the frame where two layers collide. (Click key frames in the animation bars below to see where the action is at any given frame, and *then* click in the Behaviors channel. The Behaviors channel doesn't have key frames.) The frame in the Behaviors channel turns black to show it's selected.

GEM IN THE ROUGH

Create an Automated Slide Show

Most people think of Dreamweaver's Timeline feature in terms of *moving layers* around the screen. If you drag something else into the Timelines panel, like a graphic, you'll find that you can't make it fly around. You can, however, make its *properties* change over time. And that's just the feature you need if you want to create an automated presentation of your photos.

Here's how to do it. Add an image to the timeline, either by dragging it to the timeline or by selecting the image in the document window, and choose Modify→Timeline→Add Object to Timeline.

Then decide how frequently you want the image to change.

For example, maybe you want a new image to appear every two seconds. If the timeline's frame rate is 15 fps, you'll want to change the image every 30 frames. Create as many key frames as you have images, spaced 30 frames apart.

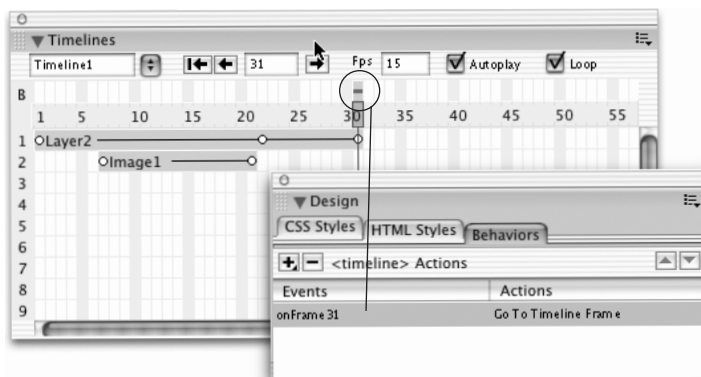
Then select each key frame and use the Property inspector to change the Src property for each. The Src property, of course, identifies the graphics file in your site folder. In other words, you can swap one image in for another at a specified time. (For best results, make sure all the images you use are the same size.)

When you play the timeline, a new image appears every other second.

Now open the Behaviors panel (Windows→Behaviors), click the + button, and choose a behavior from the menu. For example, you could make a new browser window pop up by selecting the Open Browser Window behavior. (See Chapter 11 for a complete list of Behaviors.)

Figure 12-15:

The Behaviors channel lets you add time-based behaviors to your page. Change the text in a layer every 10 seconds, for example, or write a new message to the Web browser's status bar when an animation reaches its last frame.



After you've added a behavior to the channel, a dash appears in the frame, and the Behaviors panel lists the event (it should look something like this: *onFrame36*). Unlike with a regular behavior, you can't select an event (see step 5 on page 332). The frame itself acts as the event by triggering the action when the timeline reaches the specified frame.

You can move your newly created Frame behavior by dragging it left or right in the Behaviors channel, or remove it altogether by clicking its name in the Behaviors panel, and then clicking the – button in the Behaviors panel.

Tip: Once you click inside the Behaviors channel, Dreamweaver will only let you *add* behaviors to that channel. If you try to add a behavior to another object in the page (by selecting a link or the body tag, for instance, and adding a behavior), Dreamweaver insists on adding it to the Timeline instead. To get past this little bug, click one of the animation layers inside the Timelines panel to deselect the Behaviors channel.

Adding and deleting timelines

You can create several different animations on one page, each on its own timeline, and control them using the behaviors described in the following pages. For example, you might want to have a layer fly onto the page when your visitor's mouse moves over a navigational button, and off screen when the mouse moves off the button. The fly-on, fly-off layer might supply information about where the button leads, or even contain a submenu of additional buttons.

To add an additional timeline, open the Timelines panel, perhaps by pressing Alt-F9 (Option-F9); then choose Modify→Timeline→Add Timeline. A new timeline appears in the Timeline field in the upper left of the panel.

Dreamweaver proposes generic names like Timeline1 and Timeline2, and so on; to provide a more recognizable name—*fly* or *submenu1*, for example—select the name of the timeline from the menu in the Timelines panel. Choose Modify→Timeline→Rename Timeline. In the dialog box that appears, type the new name and click OK.

It's a good idea to name a timeline immediately after creating it. If you change its name after applying behaviors that control the timeline, they won't work. You'll then need to edit each behavior to give it the timeline's new name.

If you decide you don't want a timeline any longer, you can delete it. Select a timeline from the Timelines panel, and choose Modify→Timeline→Remove Timeline. (Doing so removes all animations and actions in that timeline, but doesn't delete the layers themselves.)

Controlling Playback

Suppose you've created an automated slide show (see page 398). The page loads, and every few seconds a new slide appears. But what if you wanted to let the viewer control the slide show—pausing it, for example, when a particularly interesting image appears, and then restarting it when ready? Or what if you wanted to give your audience the option to rewind back to the beginning or jump to a particular slide?

Special Dreamweaver Behaviors give you this kind of playback flexibility.

Note: If you haven't created at least one timeline, these behaviors are grayed out in the Behaviors panel.

Starting and Stopping Timelines

As mentioned earlier in this chapter, the Autoplay box in the Timelines panel makes a timeline play automatically when the page loads. You might, however, want to start a timeline based on some other action, such as when your viewer clicks a Play button.

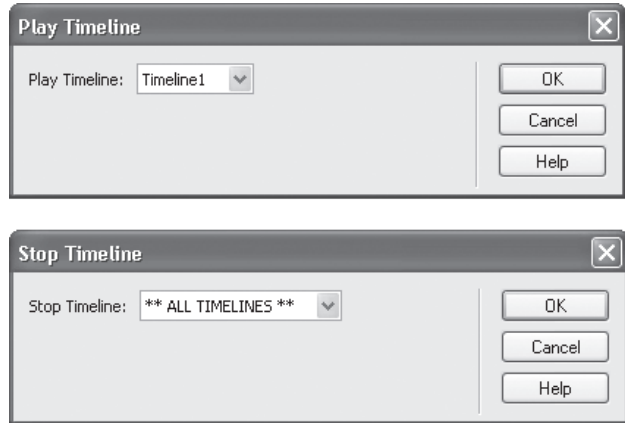
Tip: When using behaviors to *control* a layer, don't apply the behavior *to* the layer. In fact, if you select a layer, these behaviors are grayed out in the Behaviors panel. Behaviors are attached to items that *cause* something to change—for example, a link, that when clicked, starts an animation on the page—and not the thing you wish to change (in this case, a layer).

To give your visitors this push-button control, use the Play Timeline behavior, which you might attach to a Play-button graphic. (For best effect, add a dead link to an image on the page [as described on page 329] and then attach the behavior to that link.) Select a tag, click the + button on the Behaviors panel, and choose Timeline→

Play Timeline. The Play Timeline window appears (see Figure 12-16). There's only one option: select a timeline to play from the menu. Click OK, and then change the triggering event from the Behaviors panel.

Figure 12-16:

Top: Start any timeline on the page with the Play Timeline behavior. This behavior plays a timeline from its current frame—not necessarily its beginning. So, if you applied a Stop Timeline action, and later used a Play Timeline, the specified timeline would begin playback from the point it was last stopped. Bottom: Stop any or all timelines dead in their tracks with the Stop Timeline behavior. Use it to add a Pause button to an animated page.



If you let someone start an animation on the page, it's only courteous to let him stop it, too. You apply the Stop Timeline behavior just like the Play Timeline action. The dialog box looks similar, too (see Figure 12-16). The one difference: In addition to selecting any one timeline to stop, the Stop Timeline menu also includes the **** ALL TIMELINES **** option, which stops playback of all timelines at once.

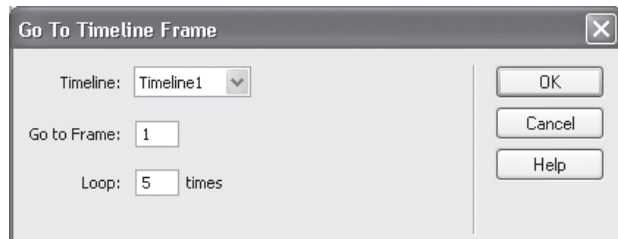
Again, this action works well when attached to a Pause-button graphic. Add the button to the page, wrap it in a dead link (see page 329), and then attach this behavior to that link, using the onClick event.

Go To Timeline Frame

You can also jump to a specific point in a timeline with the Go To Timeline Frame behavior. You could use this, for example, to jump to the end of an animation (Fast Forward), or jump back to the beginning (Rewind).

Figure 12-17:

The Loop box in the Go To Timeline Frame dialog box lets you specify the number of times you wish to play a timeline. This option only works when the behavior is attached to a frame in a timeline's Behaviors channel (see page 398).



Apply it as you would any Dreamweaver behavior (for detailed directions, see page 330): Select a tag, click the + button in the Behaviors panel, and choose Timeline→Go To Timeline Frame. A dialog box appears (see Figure 12-17). Choose a timeline from the menu, and then type a frame number in the Go to Frame box. For example, to rewind to the beginning of a timeline, select the timeline and type *1* in the box.