

**Figure 5.36** Select Mask as the layer type in the Layer Properties dialog to define a layer as a mask.

## Working with Mask Layers

*Mask layers* are special layers that allow you to hide and show elements on underlying layers. In the final movie, shapes on the Mask layer become holes that allow items on linked layers to show through.

### To create a mask layer:

1. *Do one of the following:*
  - ▶ Create a new layer in the Timeline (for example, by clicking the Insert Layer button). Flash selects the new layer.

▶ Select a layer that already exists.

In general, you should create (or select) a layer directly above the layer containing content you want to mask, although you can always create the mask separately and link the masked layers to it later.

2. From the Modify menu, choose Timeline > Layer Properties to display the Layer Properties dialog.

3. In the Type section, click Mask (Figure 5.36).

You can also rename the layer to identify it as a mask, if you want.

4. Click OK.

Flash turns the selected layer into a mask layer and places a mask icon before the layer name (Figure 5.37).



**Figure 5.37** The mask-layer icon imitates the masking effect with a dark mask shape over a checkerboard pattern.

## WORKING WITH MASK LAYERS

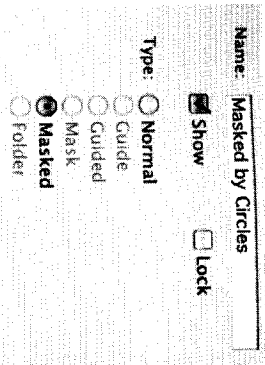
**To link layers to the mask:**

1. In the Timeline, select the layer directly below the mask layer.
2. From the Modify menu, choose Timeline > Layer Properties to display the Layer Properties dialog.
3. In the Type section, click Masked. You can rename the layer to identify it as a masked layer; if you want. If you accidentally select a layer that's not located directly below the mask layer, the Masked button will be disabled.
4. Click OK. Flash links the selected layer to the mask layer directly above it and places a masked icon before the name (**Figure 5.38**). Flash indents the icon and layer name to indicate that the mask above this layer controls it.
5. Repeat steps 1 through 4 to create more linked layers.

One mask can affect many linked layers.

**✓ Tips**

- To link existing layers to a mask layer quickly, simply drag them in the Timeline so that they sit directly below the mask itself or one of its linked layers.
- Once you have linked a layer to the mask, you can create additional new linked layers for that mask quickly. Select the linked (masked) layer; then follow the steps for creating a new layer. Flash adds the new layers as masked layers directly above the selected layer.



**Figure 5.38** Set the Masked layer type in the Layer Properties dialog (top). The checkerboard pattern of the layer icon in the Timeline indicates that the layer is masked (bottom).

- Positioning a layer beneath a list of masked layers can be tricky. When you position a layer's preview line after the last layer in the masked set, you have the choice of adding the layer to the masked set or placing it at the main level of the Timeline. Use the preview lines' subtle clues to place the layer where you want it. Position the layer directly beneath the last masked layer. To add the layer to the masked set, drag slightly to the right; the bump on the top of the preview bar moves over to the right. To add the layer to the main level of the Timeline, drag slightly to the left; the bump follows suit.

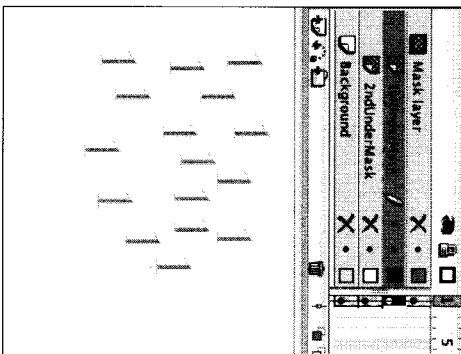
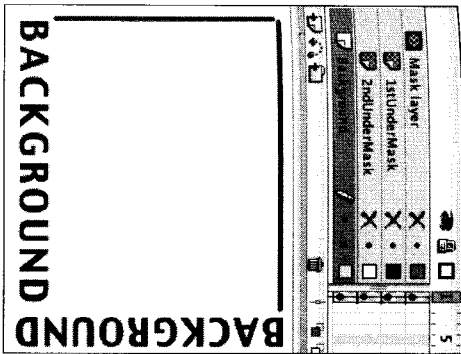
### To create the mask:

1. Create one or more layers containing graphic elements you want to reveal only through a mask.
2. Create a mask layer above your masked-content layers, and make sure that it's selected, visible, and unlocked.

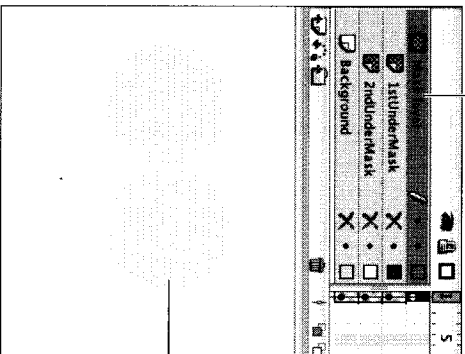
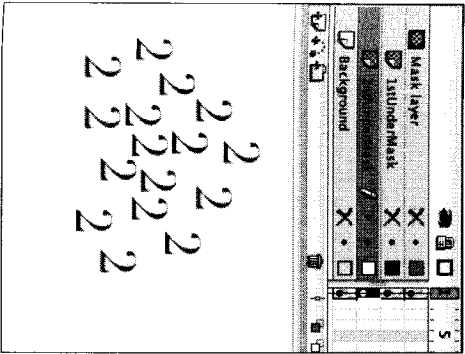
The layer should be highlighted in the Timeline, and the eye and padlock columns should contain bullets (not X or padlock icons).

3. Use the paintbrush or one of the geometric shape tools to create one or more fill shapes on the mask layer (Figure 5.39).

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*When you define this layer as a mask...*



*...these fill shapes become the mask*

## WORKING WITH MASK LAYERS

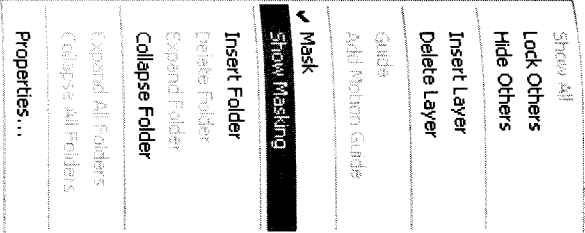
**Figure 5.39** The content for the layers that the mask will reveal is just like any other content. You create the holes in the mask from filled shapes. All the mask elements must be on the same sublevel of the layer. In other words, you must either use only editable shapes or combine all your shapes into a single group or symbol.

Flash uses only fills to create the mask and ignores any lines on the mask layer. The mask may consist of several shapes on the mask layer, but they must all be on the same sublayer. (For more information on how sublayers within a layer work, see Chapter 4.)

You can use several editable shapes, or you can create one group or symbol that contains all the shapes. If you combine editable shapes and a group or symbol, Flash uses just the editable shapes to create the mask. If you have two or more groups or symbols, Flash uses just the bottom-most group or symbol. (For more details on stacking order for groups and symbols, see Chapter 4.)

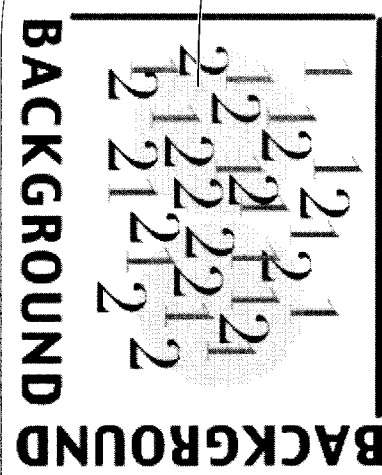
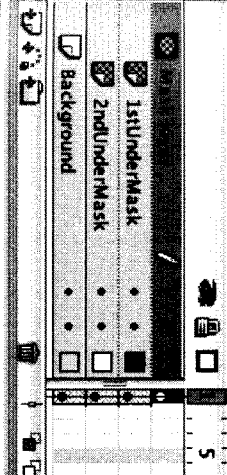
### ✓ Tip

- To convert a particular layer into a mask and link the layer beneath it in one step, use the contextual layer menu. Control-click (Mac) or right-click (Windows) the layer you want to be the mask. From the pop-up contextual menu, choose Mask. Flash automatically defines the layer as a mask, links the layer beneath the selected layer to the mask, and locks both layers so that masking is in effect.



**Figure 5.40** The Show Masking command in the contextual menu for layers locks all layers linked to the selected mask.

Transparent fill helps you see what mask will reveal



Masking not on

**Figure 5.44** After defining the mask and masked layers, you must lock them to see the mask in effect in document-editing mode.

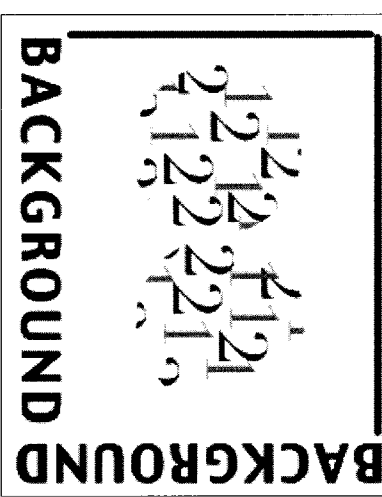
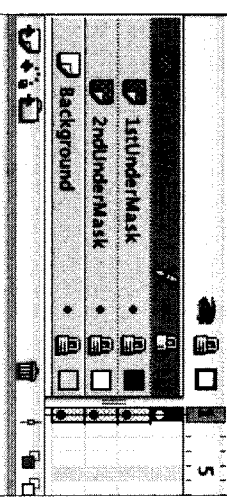
**To see the mask's effect:**

- ◆ Lock the mask layer and all linked layers.

or

1. Control-click (Mac) or right-click (Windows) a mask (or masked) layer
2. From the contextual menu, choose Show Masking (**Figure 5.40**).

Flash automatically locks the mask layer and all the layers linked to it. In document-editing mode, you must lock the mask layer and any masked layers beneath it to see the mask effect (**Figure 5.41**). You can see the effect without locking the layers in one of Flash's test modes (see Chapter 11).



Masking turned on

**WORKING WITH MASK LAYERS**

**To edit a mask:**

1. In the Timeline, select the mask layer.
2. Make sure that the layer is visible and unlocked.
3. Use any of the techniques you learned in preceding chapters to create and edit fills.

**✓ Tips**

- If you want to break the connection between a mask and its linked layers, you can simply redefine the layer type for the masked layer in the Layer Properties dialog.
- If you delete a mask layer, Flash redefines all the layers linked to it as normal layers.
- Keep in mind that masks use processor power. Using too many masks can slow the frame rate in your final movie.

**The Mystery of Masks**

A mask layer is like a window envelope (the ones you get your bills in). There may be whole sheaves of papers covered with numbers inside that envelope, but the outside presents a blank white front with just a little window that lets you see the portion of the bill showing your name and address. The mask layer is the window envelope, and the linked, or masked, layers are the papers inside.

In Flash, you create the window in the envelope by drawing and painting on a mask layer. (As you'll learn in Chapter 10, you can animate that window to create special effects.) Any filled shape on the mask layer becomes a window in the final movie. That window reveals whatever lies on the linked (or masked) layers inside the envelope. Within that envelope, you can have several layers that act just like any other Flash layers.

Here's where it gets a bit tricky. Any areas of the envelope (the mask layer) that you leave blank hide the corresponding areas of all the layers inside the envelope (the masked layers). But the same blank areas of the envelope allow all *unlinked* layers outside and below the envelope to show through.

## Using Animated Masks

In Chapter 5, you learned about Flash's capability to create mask layers that hide and reveal objects on lower layers. Sometimes, the best way to create the illusion of movement is to animate a mask so that it gradually hides or reveals objects.

Imagine a line that starts at the left edge of the Stage and goes all the way to the right edge. If you create a mask that reveals the line bit by bit, you create the illusion of a line that draws itself. Reverse the process, and you have a line that gradually erases itself.

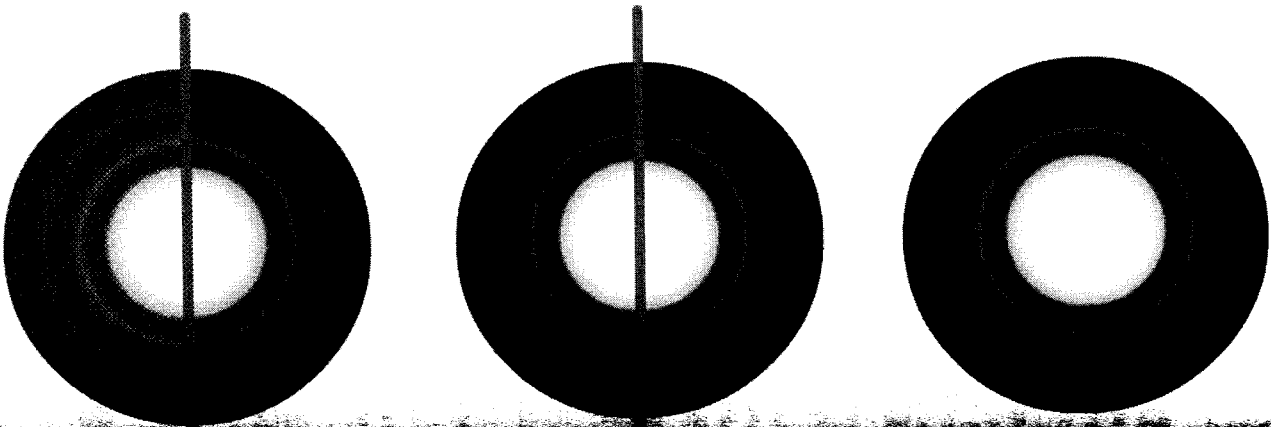
Creating rotating and shape-tweened mask graphics can give you some interesting effects. The more familiar you are with using animated masks to reveal stationary items, the better sense you'll have of when to use this technique. For practice, try animating a mask that creates a growing rainbow.

### To create a stationary graphic and a moving mask that reveals it:

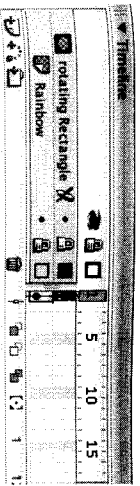
1. Open a new Flash Document, and add a second layer.
2. In the Timeline, rename the bottom layer *Rainbow*, and rename the top layer *Rotating Rectangle*.
3. In Frame 1 of the *Rainbow* layer, on the Stage, use the oval tool to draw a perfect circle with a radial-gradient fill. To create a rainbow effect, use a gradient that has distinct bands of color.
4. Erase the bottom half of the circle

(Figure 10.41).

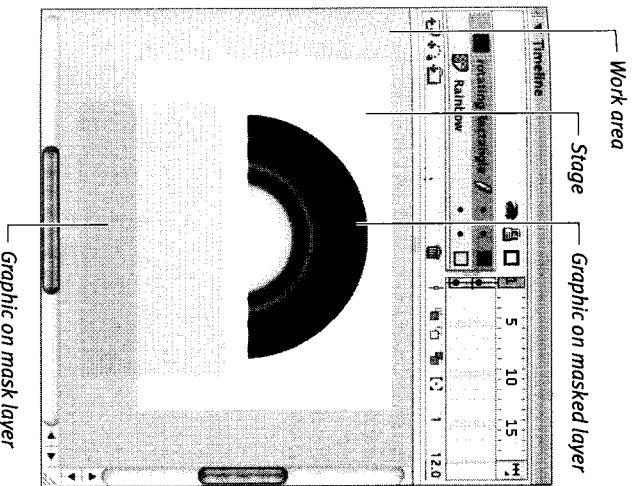
What's left is your rainbow shape. For safety, convert the rainbow to a symbol (select the rainbow on the Stage, choose Modify > Convert to Symbol, choose Graphic behavior, name the symbol, and click OK) so that you'll have a copy of the rainbow in case you accidentally delete the original.



**Figure 10.41** An easy way to create a rainbow object is to fill a circle with a multiple-color radial gradient, then delete the bottom half of the circle. Here, bisect the circle by drawing a line through it (middle) and deleting the bottom half. To delete the bottom half, select the line and the bottom half of the circle (bottom), and press Delete.



**Figure 10.42** When you create a mask layer, Flash automatically links the layer directly below the mask layer in the Timeline and locks both layers.



**Figure 10.43** To create a mask that reveals the entire rainbow, draw a rectangle that's wider and taller than the rainbow. Positioning the rectangle below the rainbow hides the rainbow completely.

5. In the Timeline, Control-click (Mac) or right-click (Windows) the *Rotating Rectangle* layer. The contextual menu for layers appears.
  6. Choose Mask. Flash converts the layer to a mask, links the *Rainbow* layer to the mask, and locks both layers (**Figure 10.42**).
  7. In the Timeline, click the padlock icons in the *Rotating Rectangle* and *Rainbow* layers to unlock them.
  8. On the Stage, in Frame 1 of the *Rotating Rectangle* layer, use the rectangle tool to draw a rectangle just below the bottom of the rainbow (**Figure 10.43**). The rectangle is your mask. Any items that lie below the rectangle on a linked layer appear; everything else is hidden. Make the rectangle a bit larger than the rainbow so that the mask can cover the whole rainbow. Using a transparent fill color lets you see the rainbow through the mask rectangle and helps you verify the mask's position. (To make the rectangles fill color transparent, select it and then, in the Color Mixer panel, assign it a low Alpha percentage.)
- Tip** You can use any of the three types of animation on a mask layer: frame-by-frame, motion tweening, or shape tweening. Advanced ActionScripters can also use ActionScript to tell one movie clip symbol to mask another.

## USING ANIMATED MASKS

## To prepare the mask for rotational animation:

1. Select the rectangle, and choose **Modify > Convert to Symbol**.

Because you want to create rotational animation, you must use a motion tween for the mask, which means that the mask graphic must be a symbol or a grouped element.

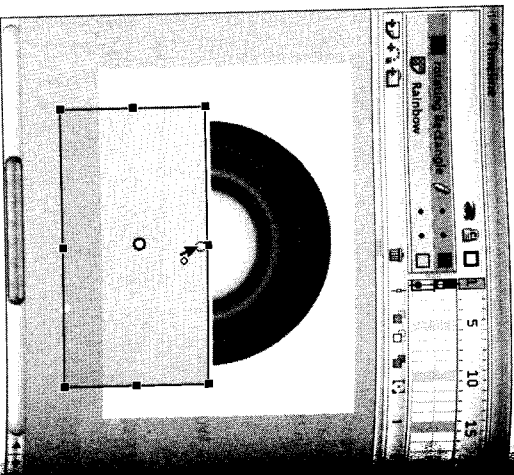
The **Convert to Symbol** dialog appears.

2. In the **Name** field, enter a name for the symbol; then click **OK**.

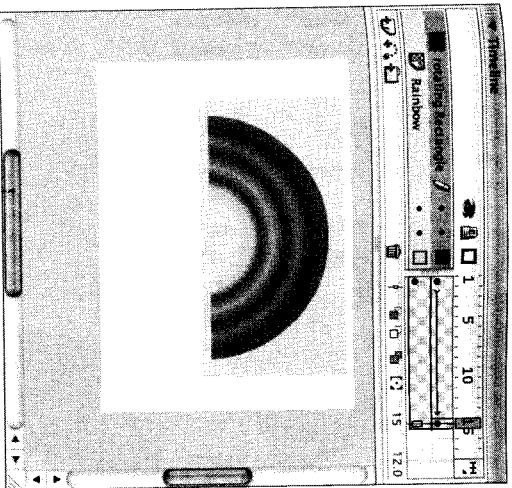
3. Using the free-transform tool, select the rectangle on the Stage, and position the pointer over the white circle that indicates the transformation point of the object. A small white circle appears next to the arrow pointer, indicating that you can move the selected object's transformation point.

4. Drag the transformation-point circle straight up until it rests in the middle of the top edge of the rectangle (Figure 10.44).

Now you can rotate the rectangle so that it swings up and over the rainbow.



**Figure 10.44** Use the free-transform tool to reposition the point around which a symbol (or grouped item) rotates. Drag the circle that indicates the transformation point to a new position. A small circle previews the new transformation-point location.



**Figure 10.45** In the final keyframe with the completed motion tween for the mask object, the mask covers the rainbow. Giving the mask a transparent fill lets you see the objects to be revealed through it as you work. The transparency of objects on the mask layer doesn't appear in the final movie.

## To complete the rotating-mask animation:

1. In the Timeline, in the Rainbow layer, select Frame 15, and choose Insert > Timeline > Frame.
2. In the Timeline, in the Rotating Rectangle layer, select Frame 15, and choose Insert > Timeline > Keyframe.
3. In Frame 15, with the rectangle selected on the Stage, use the Rotate and Skew modifier of the free-transform tool to reposition the rectangle: click and drag the bottom-left corner of the rectangle and rotate it so that the rectangle completely covers the rainbow.  
The mask that covers the rainbow in authoring mode will reveal the rainbow in the final movie.
4. In the Timeline, in the Rotating Rectangle layer, select any of the frames in the Keyframe 1 span (frames 1 through 14).
5. From the Frame Property Inspector's Tween pop-up menu, choose Motion.
6. From the Rotate pop-up menu, choose CW.
7. Enter 0 in the Times field.  
This step sets up the motion tween that rotates the rectangle 180 degrees, swinging it up and over the rainbow until it fully covers the rainbow (**Figure 10.45**).

## USING ANIMATED MASKS

## To preview the animation:

- ◆ Choose Control > Test Movie or Control > Test Scene.

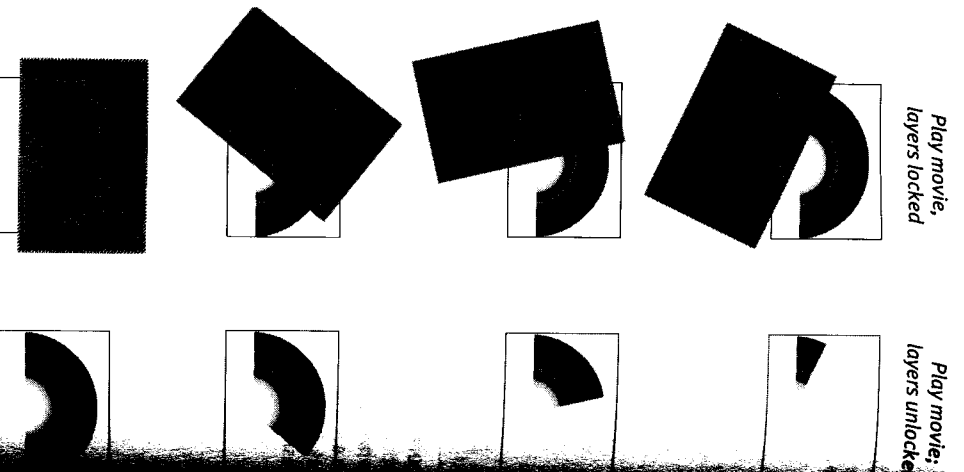
or

- ◆ In the Timeline, click the lock icon to lock both layers to see the masked rainbow; then play the movie to see the mask reveal the rainbow.

If the rainbow is not fully revealed during the tween, you may need to enlarge or reposition the rectangle. Unlock both layers, and move the playhead through the movie to see where the rectangle is in each in-between frame (Figure 10.46).

## ✓ Tips

- A quick way to lock a mask and its masked layers is to **⌘-click** (Mac) or **Ctrl-click** (Windows) the mask layer or any of the masked layers.
- To make the rainbow appear to fade in gradually, tween a change in its transparency. Select Frame 15 of the Rainbow layer and press F6, duplicating the rainbow symbol instance in a new keyframe. In Frame 1, select the rainbow symbol instance; in the Property Inspector, from the Color menu, choose Alpha; in the Value field, enter a low percentage; from the Tween pop-up menu, choose Motion.
- The Timeline Effect named Transition uses a motion tween mask to create wipes and fades. In a practice document, make a few Transition effects with different parameter settings. In the Library, double-click one of the finished-effect symbols (Transition 1, Transition 2, and so on). A dialog appears warning that if you edit the symbol you lose the ability to edit the effect via the Transition dialog. Click OK. You'll lose Flash's ability to help modify the effect but gain a chance to see how it's put together.



**Figure 10.46** As you play the movie with the layers unlocked (left), you can see the in-between position of the mask graphic. When you lock the layers (right), you see the masking as it will appear in the final exported movie.