How to create an animated face

This activity walks you step by step through the process of creating a simple animation by using Adobe Flash CS4. You use drawing tools and implement motion and shape tweens. After you test your movie, you publish it for playback by others, either through a browser or directly with Flash Player.

Draw facial features

Draw the right eye

1. Start Flash and open a blank new document.
2. The new document contains one layer and one empty keyframe.
3. Select the Oval tool and draw a small circle to represent the right eye on a face (**Figure 1**).
4. Select the Selection tool and double-click the circle's center to select it. You should see both its outline (stroke) and center (fill) selected.
5. To change the outline color of the eye, click the Stroke Color box in the Property inspector and select a new color (**Figure 2**). To change the fill color, use the Fill Color box.
6. On the Timeline, double-click the layer name, Layer 1 (**Figure 3**).

   This selects the layer name so you can rename it.

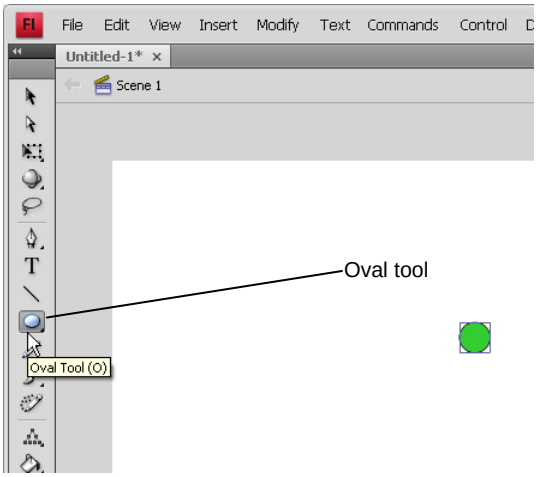

Figure 1 Right eye drawn with Oval tool

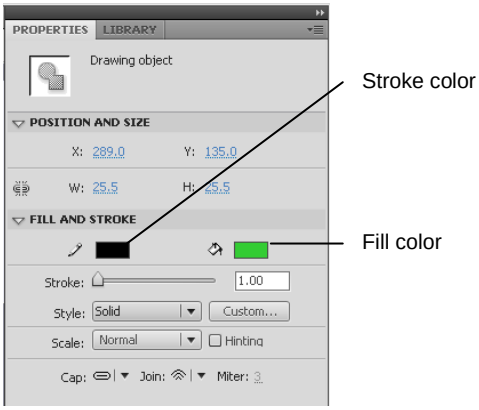

Figure 2 Image Property inspector

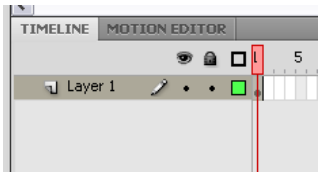

Figure 3 Layer name

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7. Rename the layer **Right Eye** and press Enter (Windows) or Return (Mac OS) (**Figure 4**).

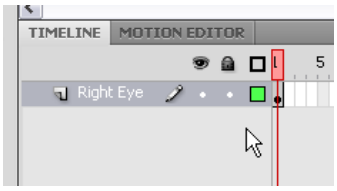

Figure 4 New layer name

Save the eye graphic as a symbol in the library

Instead of creating two eyes separately, convert the right eye from a shape to a graphic symbol. This adds the eye to the library so you can use it over and over. This will also reduce the size of your finished movie.

8. On the Right Eye layer, click frame 1 to select it (**Figure 5**).

   This automatically selects the contents of frame 1.

   Note: If the right eye is not completely selected, double-click the eye on the Stage with the Selection tool to select it.

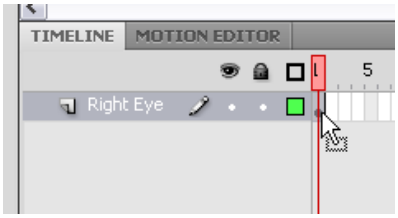

Figure 5 Frame 1 selected

9. Select Modify > Convert To Symbol.

   The Convert To Symbol dialog box opens (**Figure 6**).

10. In the dialog box, name the symbol **eye**, select Graphic as the behavior, and click OK.

    The eye on the Stage is now just an instance (copy) of the master eye symbol, which is stored in the library. The eye now has a single blue selection border (**Figure 7**) and can be selected with a single click.

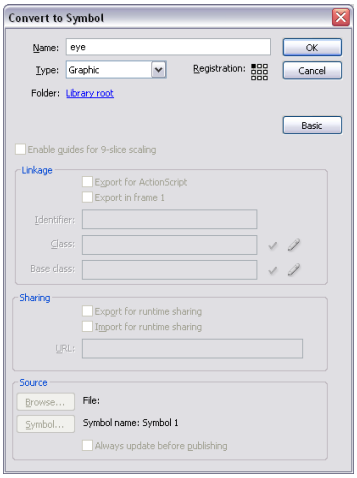

Figure 6 Convert To Symbol dialog box

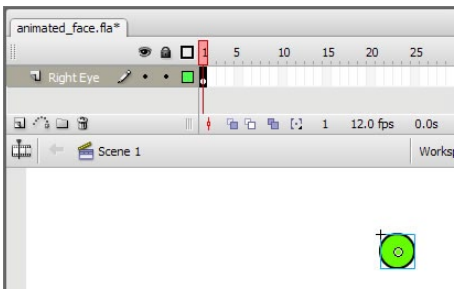

Figure 7 Graphic symbol selected

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11. Select Window > Library to see that your symbol has been added to the Library panel (**Figure 8**).

Note: You must select the eye symbol in the library to see the graphic in the preview window.

You can now reuse the eye symbol as many times as you want without redrawing it.

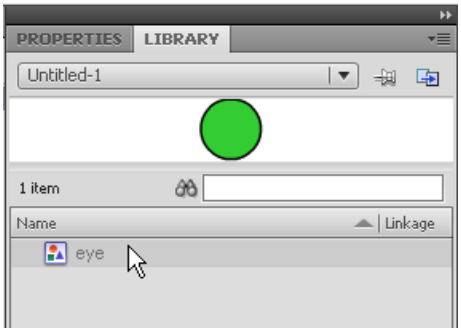

Figure 8 Library panel

Reuse the eye symbol to create the left eye

12. Click the Insert Layer button in the lower left corner of the Timeline to insert a new layer (**Figure 9**).

13. Double-click the layer name and change the name to **Left Eye**.

14. On the Left Eye layer, select frame 1.

15. Select the eye symbol in the Library panel and drag the symbol onto the Stage.

You now have a second instance of the eye on the Stage. Using instances from the library keeps the file size of your movie smaller than copying and pasting. Smaller movies load faster in a browser.

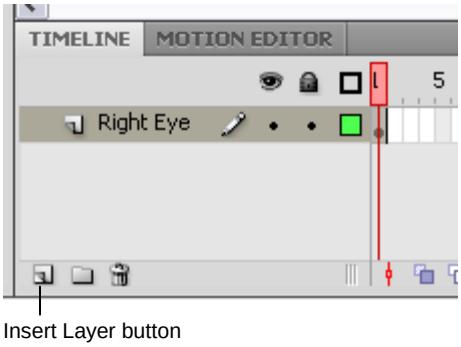

Figure 9 Insert Layer button

Draw the nose

16. Insert a new layer and name it **Nose**.

17. Select frame 1 on the Nose layer.

18. Select the Line tool and draw two lines that form an angle to represent a nose (**Figure 10**).

19. To adjust the angle after you've drawn it, use the Subselection tool (white arrow) to drag the corner or one end of the line. (You might try dragging one end of a line with the Arrow tool to see the difference between the two tools.)

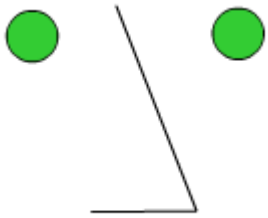

Figure 10 Draw nose

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Add frames to make a three-second movie

A Flash movie typically plays 12 frames per second. To keep the nose on the Stage for 3 seconds, for example, you need to insert 36 additional frames on the Nose layer after frame 1, the current frame. (Starting at frame 1, it will take the movie 3 seconds to reach frame 37, because 1 + 36 = 37.)

20. Select frame 37 on the Nose layer and select Insert > Timeline > Frame.

Flash inserts frames through frame 37 (**Figure 11**).

Observe that the playhead (the red rectangle at the top of the Timeline) is on frame 37 and that the nose is visible but the eyes have disappeared. At the bottom of the Timeline, you can see that this movie is currently 37 frames, is set to play at 12 frames per second, and will play for 3 seconds.

Note: The keyboard shortcut for inserting a frame is F5.

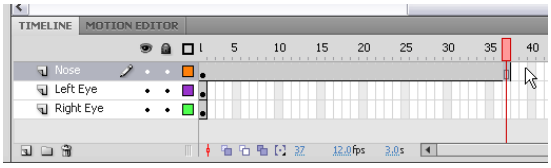

Figure 11 Frame inserted in Timeline

21. Drag the playhead to various frames.

The nose remains visible in frames 1 through 37, but the eyes appear only in frame 1.

22. To see your movie, drag the playhead to frame 1 and then select Control > Play.

At this point, not much is happening beyond frame 1.

Draw the mouth

23. Insert a new layer and name it Mouth.

24. Select frame 1 of the Mouth layer.

25. Draw a mouth in frame 1.

- Use the Line tool to draw a straight line (**Figure 12**).
- Select the Selection tool and click on the Stage away from the line to deselect it.
- Move the pointer toward the middle of the line. When a curve appears next to the pointer, drag the middle of the line downward to create a smile (**Figure 13**).
- When you release the mouse button, only the smile remains (**Figure 14**).

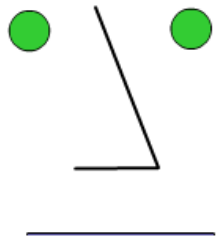

Figure 12 Mouth as straight line

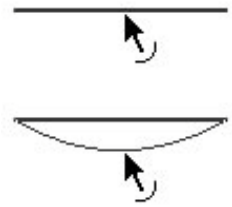

Figure 13 Drag line with Arrow tool

Figure 14 Mouth complete

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Animate the facial features

Use motion tweens to animate the eyes

Because you created the eyes by using a graphic symbol, you can animate them by using a motion tween. To create the motion tween, you need to extend the Timeline in the Right Eye layer.

1. On the Right Eye layer, select frame 37 and select Insert > Timeline > Frame (**Figure 15**).
2. With the Right Eye layer selected, choose Insert > Motion Tween.
3. Select frame 37 on the Right Eye layer and drag the right eye a short distance.

   A motion path appears on the Stage showing the path from the position in the first frame of the tween span to the new position (**Figure 16**). Because you explicitly defined the X and Y properties of the object, property keyframes are added for X and Y in the frame containing the playhead. Property keyframes appear as small diamonds in the tween span on the timeline.
4. Position the playhead on frame 1 and select Control > Play to play your movie and see the effect of the motion tween.

   The right eye gradually moves from its original position in frame 1 to the new position in frame 37. Notice that only the right eye moves.

   Note: If you want to change the motion, move only the symbol in keyframe 37.
5. Choose frame 37 on the Left Eye layer and select Insert > Timeline > Frame.
6. With the Right Eye layer selected, choose Insert > Motion Tween. In frame 37 move the left eye the same distance as the right eye.

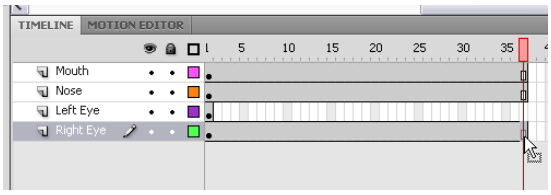

Figure 15 Tween span in the Timeline panel

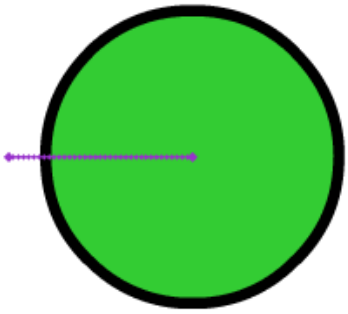

Figure 16 Tweened object with a motion path

Use a shape tween to animate the mouth

Because you created the mouth by using one of the drawing tools (the Line tool) and have not converted the mouth to a symbol, it is still a shape. You can use a shape tween to animate the mouth.

1. Select frame 37 on the Mouth layer and insert a keyframe.
2. With the Selection tool, click on the Stage away from the mouth line to deselect it. Then drag the mouth line into a bigger smile.
3. To create a shape tween between the first and last frames on the Mouth layer, click a frame between frames 1 and 37, and select Insert > Shape Tween.

   The frames containing the shape tween are now light green and contain a solid arrow running from the start frame to the end frame (**Figure 17**).
4. Select File > Save.
5. Select Control > Test Movie to see it play.

   Selecting Control > Test Movie exports a .swf file and plays it in a preview window. When the movie reaches the last frame, it loops back to frame 1 and plays again.
6. Select File > Close to close the preview window.

Create any additional animated facial features as you choose.

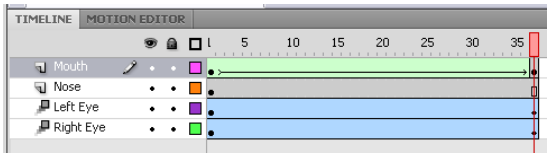

Figure 17 Shape Tween on the Mouth layer

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Publish your movie

When you're ready to deliver your movie to an audience, you can publish the Flash document (FLA file) for playback. The Publish command creates a Flash SWF file (playable with Flash Player) and an HTML document that inserts your Flash movie in a browser window. For viewers who do not have Flash Player installed, you can select to publish the FLA file in alternative file formats—GIF, JPEG, PNG, or QuickTime—with the HTML needed to display them in a browser window.

When you publish HTML with your movie, Flash also creates a file called AC_OETags.js. This JavaScript file lets your SWF file play automatically in certain browsers (called active content-compliant browsers) that would otherwise require a site visitor to click to play your movie. To avoid this problem, upload AC_OETags.js to your site in the same location as the HTML file that hosts the movie. For more about this issue, visit www.adobe.com/go/activecontent.

1. Select File > Publish Settings to open the Publish Settings dialog box (**Figure 18**).
2. Use the Formats tab to determine which file formats to output when you publish.

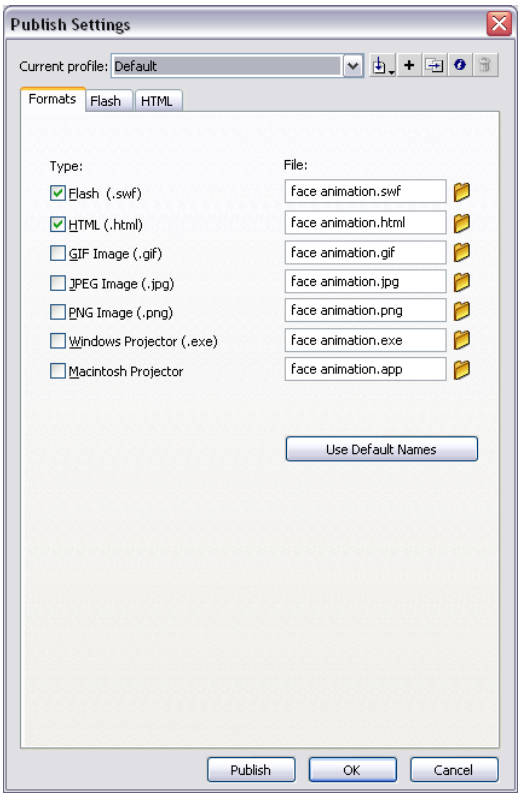

Figure 18 Publish Settings dialog box

3. Use the Flash tab to determine which Flash Player you are publishing to (**Figure 19**). If you think your audience might not have the latest player, you might want to select an older player from the Version menu.
4. Select Generate Size Report to see a detailed report of size for each asset in your movie.
5. Select Protect From Import to prevent anyone from importing your SWF file into Flash and converting it back to a FLA file.
6. Select Compress Movie to reduce the file size of the exported movie.
7. Use the HTML tab to control settings for the HTML file (**Figure 20**).
8. Deselect the Loop option if you want your movie to play through only one time and stop.
9. To publish your movie, click the Publish button.

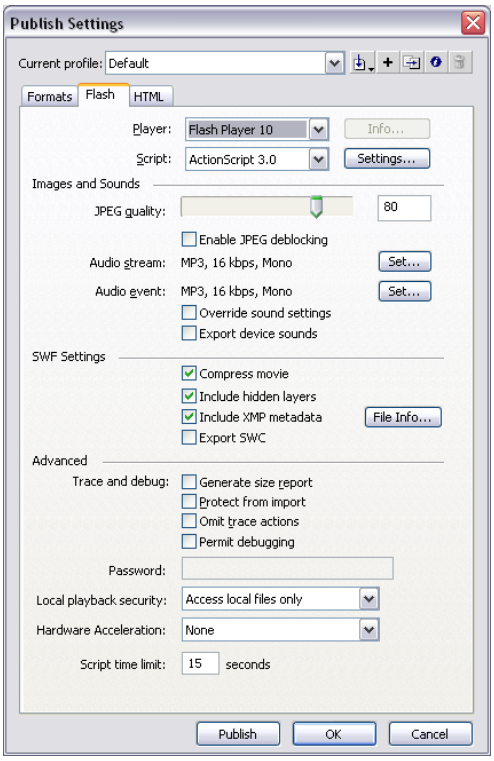

Figure 19 Flash tab of Publish Settings dialog box

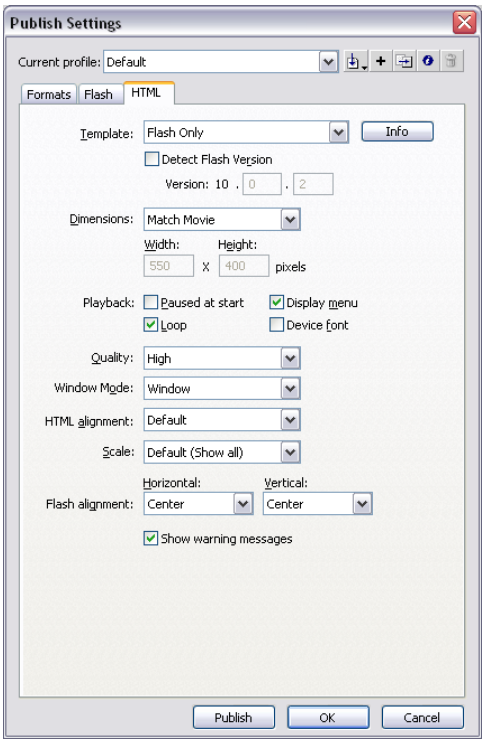

Figure 20 HTML tab of Publish Settings dialog box

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How to get started with ActionScript

ActionScript 3.0 is the scripting language of Adobe Flash CS4. You can use ActionScript to add complex interactivity, playback control, and data display to your application. For example, you might want to animate a picture of a boy walking. By adding ActionScript, you could have the animated boy follow the pointer around the screen, stopping whenever he collides with a piece of animated furniture.

ActionScript is an object-oriented programming language. *Object-oriented programming* is a way to organize the code in a program, using code to define objects and then sending messages back and forth between those objects.

You don't have to be a programmer to take advantage of ActionScript (see "Using Script Assist mode" later in this guide). But the following concepts will help:

- *Class:* The code that defines an object. This code consists of properties, methods, and events. Think of the blueprint of a house: you can't live in the blueprint, but you need it so you can build the house. You use classes to create *objects*.
- *Object:* An instance of a class. When you *instantiate* an object (create an instance of it), you declare what class it is created from and set its properties. You can create as many objects as you want from a single class—if you have a `bicycle` class, you can create many bicycle objects, each with its own properties (one bicycle might be red while another might be green).
- *Property:* One of the pieces of data bundled together in an object. A property helps define an object—it provides the object's characteristics. A song object might have properties named `melody` and `title`. You set the properties of an object when you create the object, but you can change them later as needed. A property is a *variable* that belongs to an object.
- *Variable:* A name that represents a value in the computer's memory. As you write code, you write the variable's name as a placeholder for the value. This allows you to write code even if you don't know all the possible values a visitor might provide. If you create a variable `firstName`, you can tell your program to display the visitor's first name without knowing in advance what the visitor's first name is.
- *Method:* An action that can be performed by an object. For example, the class `horse` might have a method called `gallop()`. When the method `gallop()` is called, it shows an animation of the horse galloping from one point to another.
- *Function:* A block of code that carries out specific tasks and can be reused in your program. For example, you might create a function called `checkEmail()` to verify that text typed by a visitor is a valid e-mail address. Each time a visitor provides an e-mail address, you can call `checkEmail()` to make sure the visitor has provided text that can actually be used as an e-mail address. If you ever want to update the function, you only have to do it once instead of in each place where e-mail addresses must be validated. You can also think of a method as a *function* attached to an object.
- *Event:* Something that happens in a Flash movie that ActionScript is aware of and can respond to. Many events are related to user interaction—for example, a user clicking a button or pressing a key on the keyboard. The technique for specifying certain actions that should be performed in response to particular events is known as *event handling*.

If you've worked with symbols in Flash, you're already used to working with objects. Imagine you've defined a movie clip symbol—say a drawing of a rectangle—and you've placed a copy of it on the Stage. That movie clip symbol is also an object in ActionScript; it's an *instance* of the MovieClip *class*. The main timeline of a Flash movie also belongs to the Movie Clip class.

You can modify various characteristics of any movie clip. When a movie clip is selected, the Property inspector shows some of the characteristics you can change, such as its X coordinate or its width. Or you can make color adjustments such as changing the clip's alpha (transparency). Other Flash tools let you make more changes, such as using the Free Transform tool to rotate the rectangle. All of the ways you can modify a movie clip symbol in the Flash authoring environment are also things you can do in ActionScript. In ActionScript, you use the *methods* of the MovieClip class to manipulate or change the *properties* of your movie clip.

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For more about object-oriented programming, see *Programming ActionScript 3.0*, “Object-oriented Programming in ActionScript” (in Flash, select Help > Flash Help).

Using Script Assist mode

You can add ActionScript in the authoring environment by using the Actions panel (**Figure 1**). The Actions panel provides Script Assist mode to simplify the coding process.

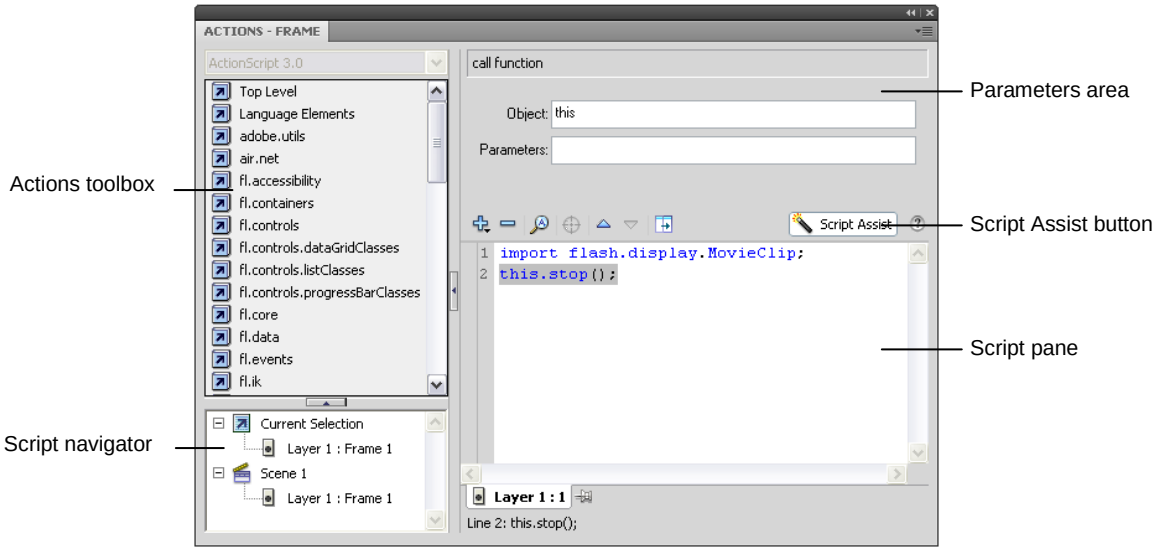

Figure 1 Actions panel in Script Assist mode

In Script Assist mode, you can add ActionScript to your Flash document without writing the code yourself. You select actions from the Actions toolbox and set the options for each action in the parameters area. You must know a little about what functions to use to accomplish specific tasks, but you don’t have to learn syntax (the grammar of ActionScript). Many designers and nonprogrammers use this mode.

One of the first things to learn is how to stop your movie at a certain spot. You will also learn how to send the playhead to a particular frame in the movie.

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Using ActionScript to stop a movie

1. Start Flash and open a movie. Create a layer in your movie named **actions**. In the frame that corresponds to the end of your movie, insert a new keyframe.
2. Select Window > Actions to display the Actions panel.
3. If you don't see the parameters area in the Actions panel, click the Script Assist button in the upper-right corner (**Figure 2**).

   Classes are organized into packages. You want to add a `stop()` action to a movie clip (in this case, your timeline is the movie clip), so you must locate the Movie Clip class. The Movie Clip class is part of the Flash.Display package.
4. In the Actions toolbox on the left side of the Actions panel, scroll down and click the Flash.Display package to display the classes it contains.
5. Scroll down again to find the Movie Clip class and click to expand it (**Figure 3**).
6. Click Methods to view the methods available for the Movie Clip class.

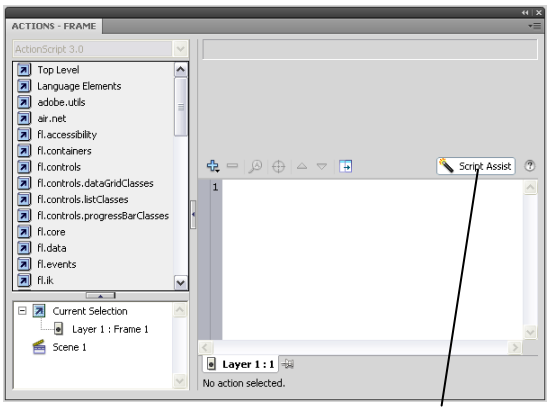

Figure 2 Actions panel

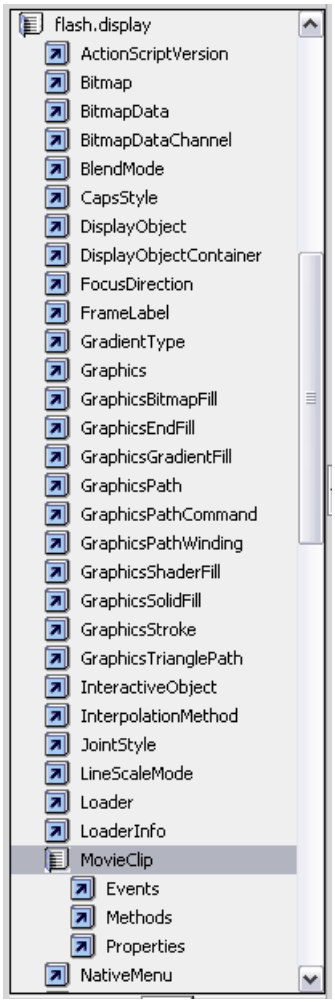

Figure 3 Movie Clip class

7. Scroll down to the Stop method. Do one of the following:

   - Double-click the Stop method.
   - Drag the Stop method into the Script pane.

   Code for applying the Stop method appears in the Script pane (**Figure 4**). The first line (`import flash.display.MovieClip();`) imports the code necessary for the Movie Clip class. The second line is the Stop action itself. The red code `not_set_yet` indicates you should use Script Assist to finish the code.

8. Click in the Object field in the parameters area of the Actions panel.

   The Insert Target Path button is now active. The target path helps you locate the object you are trying to control.

9. Click the Insert Target Path button.

   The Insert Target Path dialog box appears (**Figure 5**).

10. Select the Relative option and click Root.

    This sets the target path to `this`.

11. Click OK to close the Insert Target Path dialog box.

    The completed script for the Stop method appears in the Script pane (**Figure 6**). This code will cause your movie to stop playing at the end of the movie, frame 40.

    Note: In ActionScript, `this` is used the same way that you would refer to yourself as "me" instead of using your full name. Remember that the main timeline is an instance of the MovieClip class. In Figure 6, Flash uses `this` to refer to the movie clip that frame 40 belongs to.

12. Close the Actions panel.

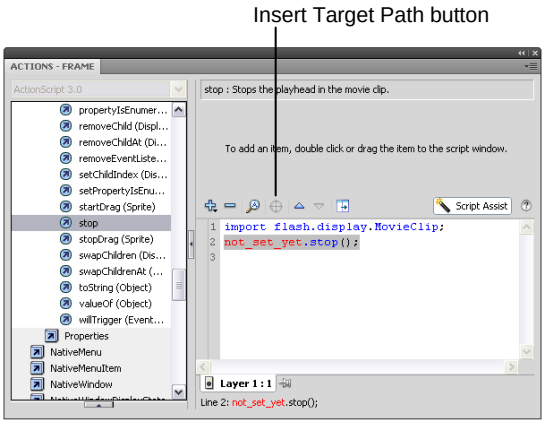

Figure 4 Stop method

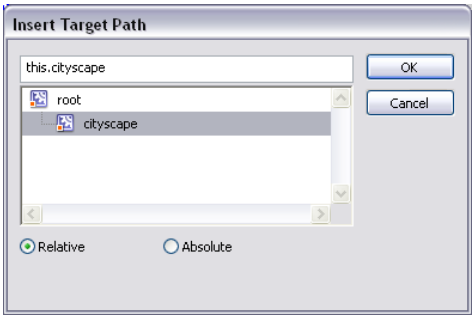

Figure 5 Insert Target Path dialog box

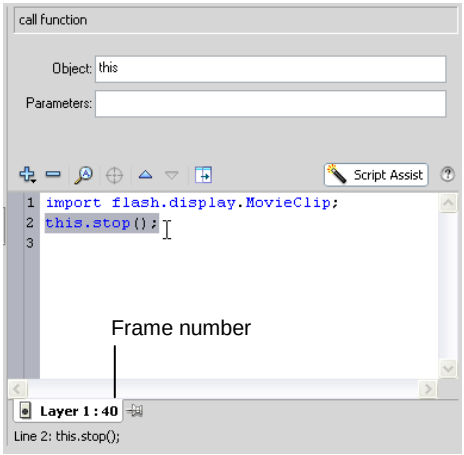

Figure 6 Stop method applied to frame 40

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Event handling

The technique for specifying certain actions that should be performed in response to particular events is known as *event handling*. Event handling consists of three important elements:

- *The event source:* Which object will trigger the event? For example, which button will be clicked, or which Loader object is loading the image?
- *The event:* What is going to happen, what interaction do you want to respond to? Identifying the event is important, because an object can trigger (and listen for) several events.
- *The response:* What action(s) do you want performed when the event happens?

When an ActionScript program is running, Adobe Flash Player just sits and waits for certain events to happen, and when those events happen, the player runs the specific ActionScript code you've specified for those events. For the program to know what events are important, you must create an event listener. An *event listener* is a function Flash Player executes in response to specific events.

Adding an event listener is a two-step process:

- First, you create a function or class method for Flash Player to execute in response to the event. This function is sometimes called the *listener function*.
- Second, you use the addEventListener() method to connect the listener function with the target of the event. The addEventListener() function tells Flash what object to listen to, what event to listen for, and what function to execute in response.

Using ActionScript to go to another frame

1. Create a button users can click to go to a particular frame in your movie. Make sure you place the button on the Stage (**Figure 7**).
2. Select the button and use the Property inspector to give the button a unique instance name (**Figure 8**).
3. In the main timeline of your movie, create a layer named **actions**.
4. Create a keyframe in the actions layer that corresponds to the keyframe where your button first appears on the Stage. Select this keyframe in the actions layer.

   Note: If your button doesn't appear in this frame, Flash will generate an error message because you are referring to an object that isn't on the Stage yet.
5. Select Window > Actions to display the Actions panel.
6. If you don't see the parameters area in the Actions panel, click the Script Assist button.
7. In the Actions toolbox on the left side of the panel, select the AddEventListener method from the IEventDispatcher class.

   To find the AddEventListener method, open flash.events, and then open IEventDispatcher.

Figure 7 Button instance

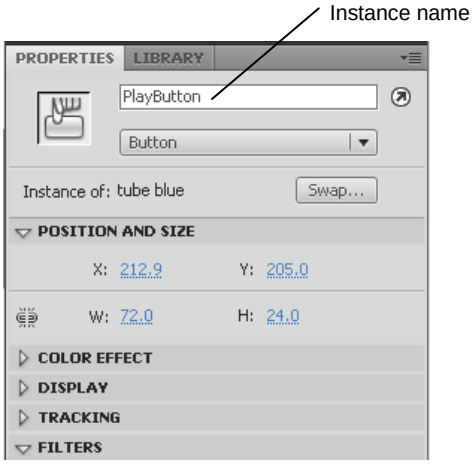

Figure 8 Button instance

8. Double-click the AddEventListener method to add it to the Script pane (**Figure 9**).
9. Click in the Object field in the parameters area of the Actions panel.

   The Insert Target Path button is now active.
10. Click the Insert Target Path button.

    The Insert Target Path dialog box appears (**Figure 10**).
11. Select the Relative option and select the instance name of your button. Click OK to close the dialog box.

    The event listener is attached to the instance of your button (**Figure 11**).

    Next, you select an event to listen for.

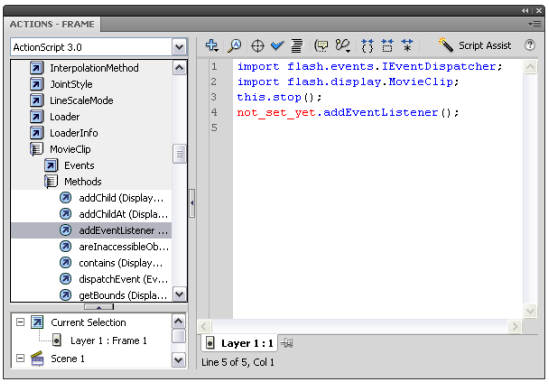

Figure 9 AddEventListener method in the Actions toolbox

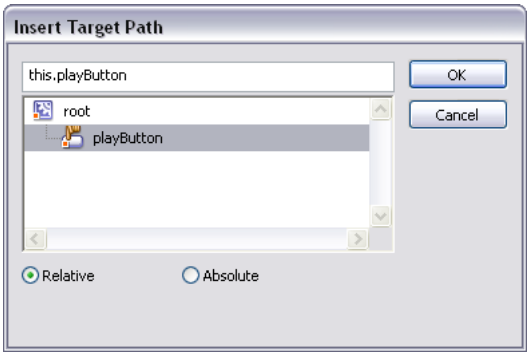

Figure 10 Insert Target Path dialog box

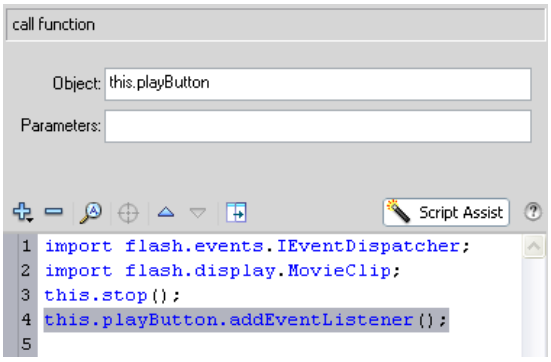

Figure 11 Event listener code in the Script pane

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12. In the Actions toolbox on the left side of the panel, select the CLICK property from the MouseEvent class (**Figure 12**).

To find the CLICK property, open Flash.Events, open MouseEvent, and open Properties.

13. In the Script pane, select the AddEventListener() line to display the parameters for this method. Then, in the parameters area, click in the Type field.

14. In the Actions toolbox, double-click the CLICK property.

Script Assist adds the property to your code as `MouseEvent.CLICK` (**Figure 13**).

Now your code will listen for a click on the button. To tell the event listener how to respond when that click occurs, you next create a function.

15. In the parameters area, type a name for your function in the Listener field. You can use any name you like, but make sure the name of the function is unique and contains no spaces (**Figure 14**).

The function name appears in the Script pane as you type. You have named the function, but you haven't created it yet.

16. In the Actions toolbox, select the `function` keyword from Language Elements.

To find the `function` keyword, expand Language Elements. Then expand Statements, Keywords & Directives, and expand Definition Keyword.

17. Double-click the **function** keyword in the Actions toolbox.

The code for creating a function appears in the Script pane (**Figure 15**).

18. In the parameters area of the Script pane, type the name of your function in the Name field.

Note: The function name must be typed exactly as you typed it for the AddEventListener function in step 15. Function names are case-sensitive.

19. In the parameters area of the Script pane, type **event:MouseEvent** in the Parameters field.

In this field, you are naming a variable (**event**) and indicating what type of variable it is (**MouseEvent**).

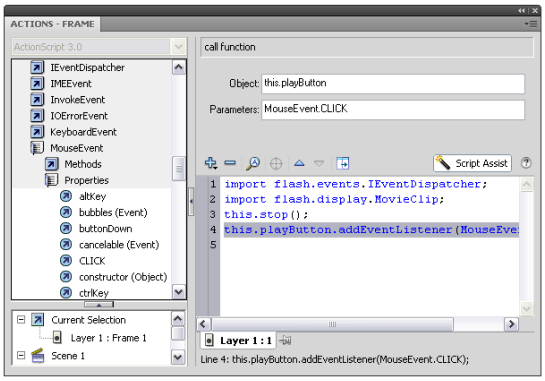

Figure 12 CLICK property in the Actions toolbox

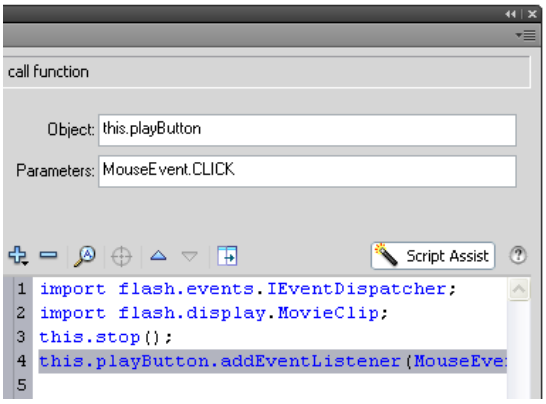

Figure 13 CLICK property in the Script pane

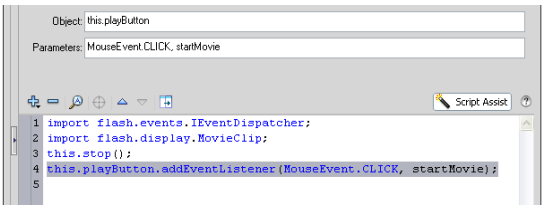

Figure 14 Function name in the Listener field

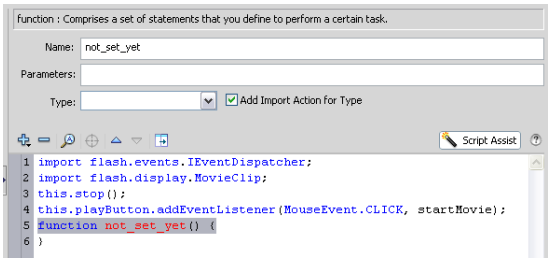

Figure 15 Function code

20. In the parameters area of the Script pane, select Void from the Type pop-up menu.

Some functions return a value when called. The keyword `void` indicates that this function does not return a value.

Now you can tell the function what you want it to do when the CLICK event occurs.

21. In the Actions toolbox on the left side of the panel, select the GotoAndPlay method for the Flash.Display class (**Figure 16**).

To find the GotoAndPlay method, expand Flash.Display, and then expand MovieClip.

22. Select the function in the Script pane and double-click the GotoAndPlay method in the Actions toolbox.

The method is added to the function (**Figure 17**).

23. Click in the Object field in the parameters area of the Actions Panel.

The Insert Target Path button is now active.

24. Click the Insert Target Path button to display the Insert Target Path dialog box.

25. Select the Relative option and select the movie clip you want to play when the button is clicked. If you want the movie in the main timeline to play, select Root to set the target path to `this`.

26. Click OK to close the Insert Target Path dialog box.

27. In the Frame field, type the number of the frame you want to send the playhead to. For example, if you want the movie to start from the beginning, type the number **1** to play the movie's first frame.

28. Close the Actions panel.

29. Save the movie.

30. Select Control > Test Movie to test the movie.

31. Select File > Close to close the preview window.

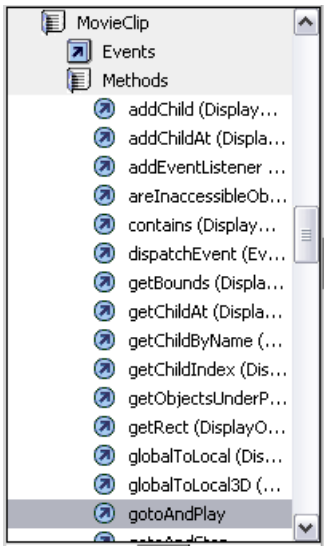

Figure 16 GotoAndPlay method

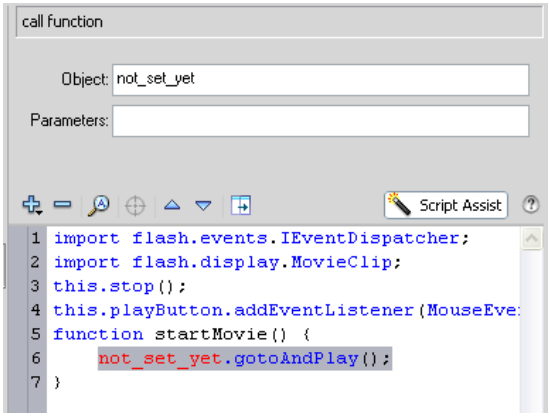

Figure 17 GotoAndPlay method in the Script pane

For more about ActionScript, see *Programming ActionScript 3.0*, "Getting Started with ActionScript" (in Flash, select Help > Flash Help).

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How to create a button symbol

Button symbols

Buttons give visitors a way to control parts of a movie. You can use button symbols to create interactive buttons that respond to mouse clicks, rollovers, or other visitor interaction. Button symbols are four-frame interactive movie clips. The first three frames display the button's three possible states: Up, Over, and Down. The fourth frame, Hit, defines the active area of the button. The Timeline for a button doesn't play like other movies; it reacts to pointer movement and actions by jumping to and displaying the appropriate frame.

You can create the image that represents your buttons in several ways. For example, you can use an existing graphic as the button, or you can create a shape by using the drawing tools.

Create a button

You will create a new button symbol that contains two layers. One layer will contain a shape representing the background of the button. The second layer will include a text label for the button. You will change the background and text label in the Over and Down states of the button to create the rollover effect.

1. Start Adobe Flash CS4 and create a new Flash file (ActionScript 3.0).
2. Select Insert > New Symbol.

   The Create New Symbol dialog box appears (**Figure 1**).
3. Select Button as the behavior type, name the button, and click OK.

   You are now in symbol-editing mode and viewing a separate Timeline for the button symbol. The Up frame contains a keyframe (**Figure 2**).

   Each frame on the Timeline of a button symbol has a specific function:

   - *Up state:* Represents the button's appearance whenever the pointer is not over the button.
   - *Over state:* Represents the button's appearance when the pointer is over it.
   - *Down state:* Represents the button's appearance as it is clicked.
   - *Hit state:* Defines the area that will respond to a mouse click. This area will be invisible in the published movie.
4. Make sure the Up frame is selected.
5. Use the drawing tools to create a shape for your button. Use the Property inspector to set the fill and stroke colors for the Up state of the button.
6. Select the Over state and select Insert > Timeline > Keyframe to add a keyframe.

   Adding this keyframe copies the button graphic from the Up frame to the Over frame.

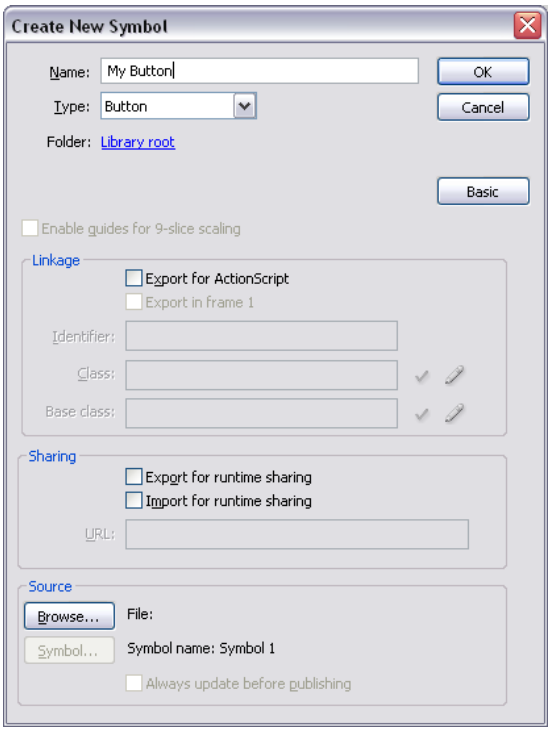

Figure 1 Create New Symbol dialog box

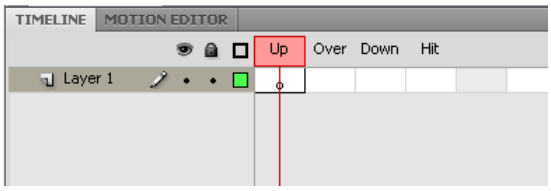

Figure 2 Button frames: Up, Over, Down, Hit

7. Select the Over keyframe and use the Selection tool to select the button.
8. Change the fill or stroke color of the button shape.

   When visitors roll over the button, the button will appear as you see it in the Over frame.
9. Insert keyframes in the Down and Hit frames of the Text layer.

   This copies the button graphic from the Over frame to the Down and Hit frames.
10. Insert a new layer and name it Text.
11. Select the Up frame of the Text layer.

    This frame already contains a keyframe.
12. Use the Text tool to type text on the button shape.
13. Use the Property inspector to adjust the font, size, and color of the text so it fits nicely on your button shape.
14. Use the Selection tool or the Up, Down, Left, and Right Arrow keys to position the text on the button shape.
15. Insert a keyframe in the Over frame of the Text layer.
16. Select the text and use the Property inspector to change some feature of the text in the Over frame, such as color.
17. Insert a keyframe in the Down frame. If you want the text to change appearance when the button is clicked, edit the appearance of the text in the Down frame.

    The Timeline should now appear as it does in **Figure 3**.

    Now you can insert an instance (copy) of the button symbol into the main Timeline of your movie.
18. Click Scene 1 to exit symbol-editing mode and return to the main Timeline.
19. Select Window > Library to display the Library panel.

    The new button symbol appears in the Library panel (**Figure 4**).

    Note: You must select the symbol in the library to see the symbol in the preview pane.
20. Drag the button symbol from the library onto the Stage.
21. Select Control > Test Movie to test the movie.

    When you roll over the button with the pointer, you see the changes you defined in the Over frames for the button. If you edited the Down state of the button, this will be visible when you click the button.
22. Select File > Close to close the preview window. Then save your movie.

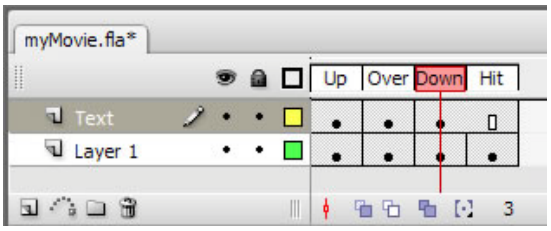

Figure 3 Button Timeline

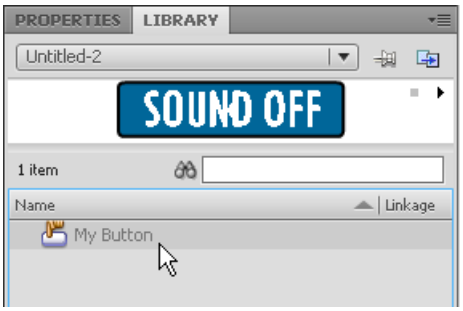

Figure 4 Button in library

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Adding sound to a button

You can also add sounds to the button so visitors hear a sound when they interact with the button.

1. Use the Selection tool to double-click the button to enter symbol-editing mode for the button.
2. Insert a new layer and name it Sound.
3. Select File > Import > Import To Library to import a short sound into the library.

   You can acquire royalty-free sounds from sites such as www.flashkit.com.
4. On the Sound layer, add a keyframe to correspond with the button state to which you want to add a sound.

   For example, to play a sound when visitors roll over the button, add the keyframe to the Over state.
5. Click the new keyframe.
6. Make sure the Property inspector is visible. (Select Window > Properties.)
7. In the Property inspector, select a sound file from the Sound pop-up menu (**Figure 5**).
8. Select Event in the Sync pop-up menu.

   The sound will play when visitors interact with the button.

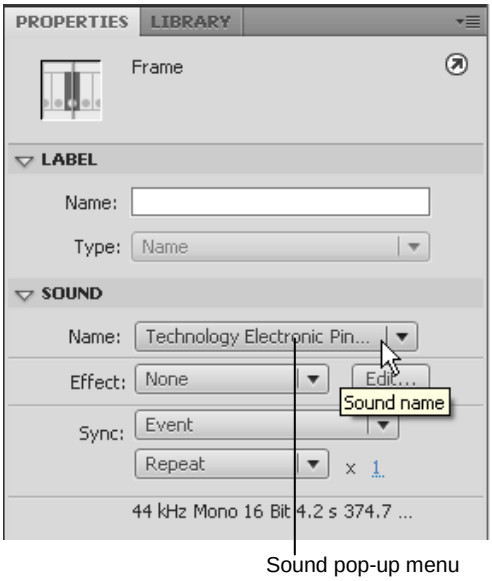

Figure 5 Property inspector

Adding control with actions

Right now the button looks great, but it doesn't perform any action. You can remedy this by adding ActionScript code to your movie.

Buttons give visitors control over the movie. You can create code for your buttons to stop the movie, stop sounds, restart the movie (after stopping it), or jump to different frames within the movie and begin playing. You can add actions to any instance of the button symbol you've placed in your movie.

1. Select the button instance to which you want to add an action. Use the Name text box in the Property inspector to give the button a unique instance name (**Figure 6**).
2. In the main timeline of your movie, create a new layer named **Actions**.
3. Create a keyframe in the actions layer that corresponds to the keyframe where your button first appears on the Stage. Select this keyframe in the actions layer.

   Note: If your button doesn't appear on this frame, Flash generates an error message when you publish the movie because the ActionScript you include on this frame refers to an object that isn't on the Stage yet.
4. Select Window > Actions to display the Actions panel.
5. If you don't see the parameters area in the Actions panel, click the Script Assist button.
6. In the Actions toolbox on the left side of the panel, select the AddEventListener method for the IEventDispatcher class.

   To find the AddEventListener method, expand Flash.Events, and then expand IEventDispatcher.
7. Double-click the AddEventListener method to add it to the Script pane (**Figure 7**).
8. Click in the Object field in the parameters area of the Actions panel.

   The Insert Target Path button is now active.
9. Click the Insert Target Path button.

   The Insert Target Path dialog box appears (**Figure 8**).
10. Select the Relative option and select the instance name of your button. Click OK to close the dialog box.

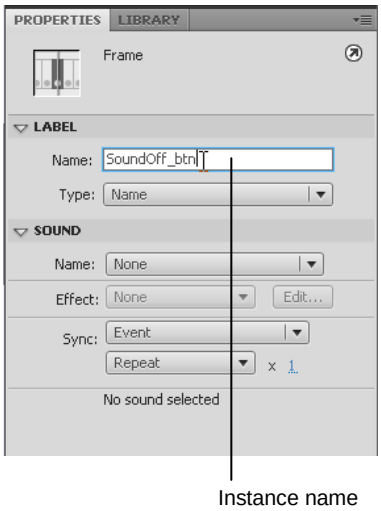

Figure 6 Button Property inspector

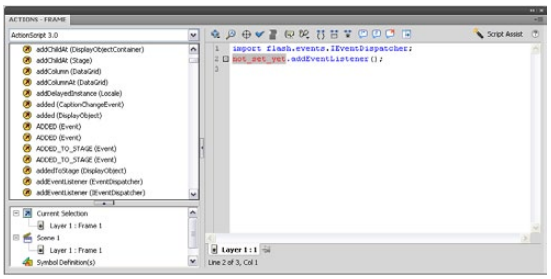

Figure 7 AddEventListener method in the Actions toolbox

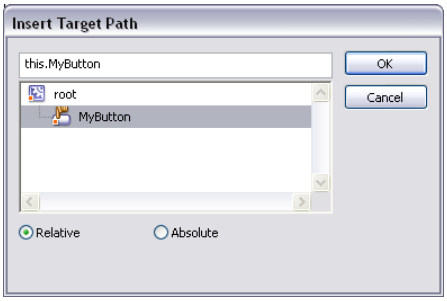

Figure 8 Insert Target Path dialog box

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11. In the Actions toolbox on the left side of the panel, select the CLICK property from the MouseEvent class (**Figure 9**).

To find the CLICK property, expand Flash.Events, and then expand MouseEvent.

12. In the Script pane, select the AddEventListener() line to display the parameters for this method. Then, in the parameters area, click in the Type field.

13. In the Actions toolbox, double-click the CLICK property.

Script Assist adds the property to your code as `MouseEvent.CLICK` (**Figure 10**).

14. In the Listener field in the parameters area, type a name for the function that should execute when the button is clicked. You can use any name you like, but make sure the name of the function is unique and contains no spaces.

The function name appears in the Script pane as you type. You have named the function, but you haven't created it yet.

15. In the Actions toolbox, select the `function` keyword from Language Elements.

To find the `function` keyword, expand Language Elements. Then expand Statements, Keywords & Directives, and expand Definition Keyword.

16. Double-click the **function** keyword in the Actions toolbox.

The code for creating a function appears in the Script pane.

17. In the parameters area of the Script pane, type the name of your function in the Name field.

Note: You must type the function name exactly as you typed it for the AddEventListener function. Function names are case-sensitive.

18. In the parameters area of the Script pane, type **event:MouseEvent** in the Parameters field (**Figure 11**).

In this field, you are naming a variable (**event**) and indicating what type of variable it is (**MouseEvent**).

19. In the Actions toolbox on the left side of the panel, select the StopAll method for the SoundMixer class.

To find the StopAll method, expand Flash.Media, and then expand SoundMixer.

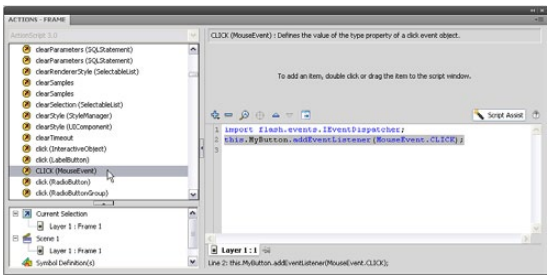

Figure 9 CLICK property in the Actions toolbox

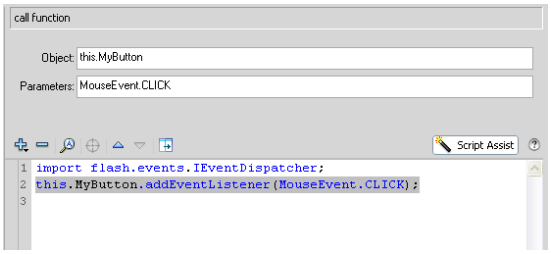

Figure 10 CLICK property in the Script pane

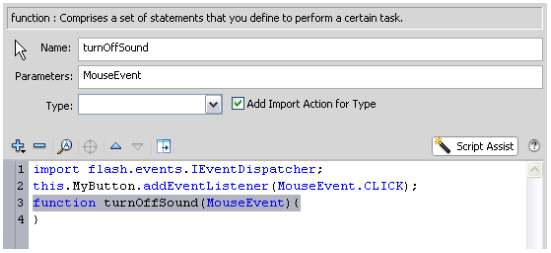

Figure 11 Function code in the Script pane

20. Select the function in the Script pane and double-click the StopAll method in the Actions toolbox.

The method is added to the function (**Figure 12**).

21. Save the movie.

Now when visitors click the button, all sounds currently playing in the movie will stop.

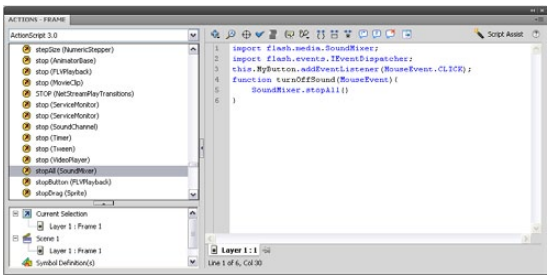

Figure 12 StopAll method in the Actions panel

For more about ActionScript, see *Programming ActionScript 3.0*, “Getting Started with ActionScript” (in Flash, select Help > Flash Help).

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How to create text effects with filters

You can add graphics filters to text, movie clips, and buttons in Adobe Flash CS4. Graphics filters are available in the Filters section of the Property inspector.

Applying the Drop Shadow filter to text

The Drop Shadow filter makes it appear that text or an object is casting a shadow.

1. Start Flash and open the document you want to edit.
2. Select the text to which you want to add a filter.
3. In the Property inspector, display the Filters section (**Figure 1**).

   If the Property inspector isn't visible, select Window > Properties.
4. Click the Add Filter icon ( ) in the lower left corner of the panel.
5. Select Drop Shadow in the Filters menu (**Figure 2**).

   The Drop Shadow filter is applied to the text (**Figure 3**).

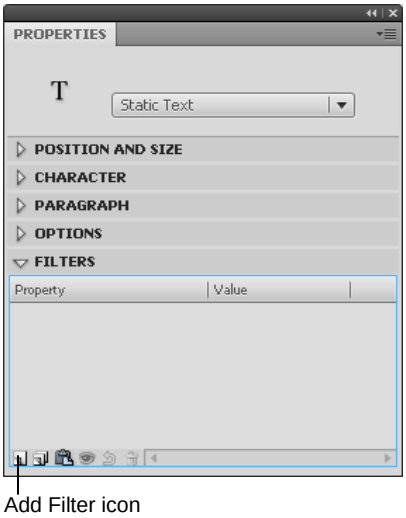

Figure 1 Filters section of the Property inspector

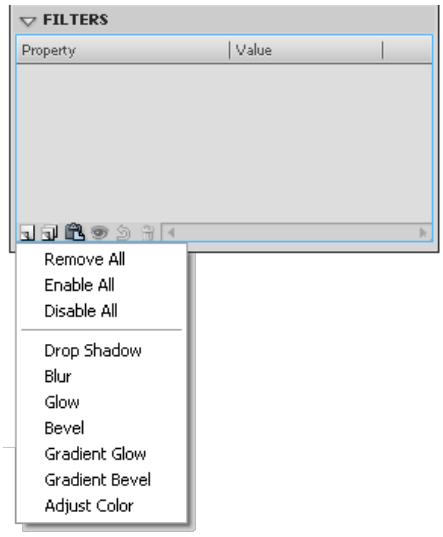

Figure 2 Filters menu

Figure 3 Drop shadow applied

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You can adjust the characteristics of the Drop Shadow, such as its color, in the Filters section of the Property inspector (**Figure 4**).

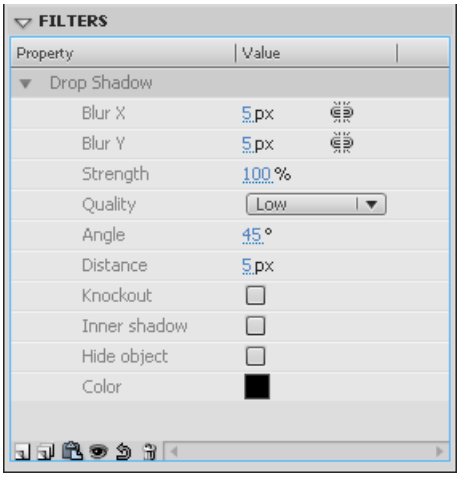

Figure 4 Drop shadow properties

Other graphics filters

There are several other graphics filters that you can apply to text to create interesting visual effects.

Blur

The Blur filter softens the edges and details of objects. Applying a blur to an object can make it appear as if it is behind other objects, or make an object appear to be in motion. Adjust the amount and direction of blur by using the X and Y text boxes.

Glow

The Glow filter lets you apply a color around the edges of an object.

- *Glow:* Make the object appear to shine.
- *Inner Glow:* Apply the glow only within the boundaries of the object.
- *Knockout:* Remove the object and leave the glow. The object appears outlined in glow.

Bevel

Applying a bevel applies a highlight to the object that makes it appear to be curved up above the background surface.

- *Inner Bevel:* Give the object a three-dimensional look by applying highlights and a shadow to the inside of the object.
- *Outer Bevel:* Give the object a three-dimensional look by applying highlights and a shadow to the outside of the object.
- *Full Bevel:* Apply both inner bevel and outer bevel effects to the object.

You can alter the bevel's shadow and highlight colors, the type of bevel (inner, outer, or full), its strength, and the angle of light that falls on it.

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Gradient Glow

Applying a gradient glow produces a glow look with a gradient color across the surface of the glow. The gradient glow requires one color at the beginning of the gradient with an Alpha value of 0. You cannot move the position of this color, but you can change the color.

Gradient Bevel

Applying a gradient bevel produces a raised look that makes an object appear to be raised above the background, with a gradient color across the surface of the bevel. The gradient bevel requires one color in the middle of the gradient with an alpha value of 0.

Adjust color

The Adjust Color filter allows you to finely control the color attributes of the selected object, including contrast, brightness, saturation, and hue.

- *Brightness:* Make the object brighter or darker.
- *Contrast:* Increase or decrease the distinction between light and dark.
- *Saturation:* Increase the intensity of color. For example, raising saturation on blue text makes the text a more vibrant blue.
- *Hue:* Increase or decrease the shade of the color.

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How to create transitions with motion tweens

You may have noticed from watching television or movies that transitions are a subtle but important part of telling a story. For example, dissolving between images can indicate a passage of time. On the web, you can use transition effects to create moods and to help keep your visitors interested. You can use transitions to focus the visitor's attention or to indicate a preferred path through your site. One way to create transitions in Adobe Flash CS4 is to apply effects to a motion tween.

Rotation

In the Property inspector, you can add rotation to any motion tween. Rotation can draw attention to content that is entering or exiting the Stage.

To add rotation to a motion tween:

1. Open an existing Flash document or create and save a new Flash document.
2. Add a symbol to the Stage and make sure it is alone on its own layer. By default the symbol is placed in the first keyframe of the timeline. This will be the first frame and starting symbol position for the motion tween.
3. Decide how much time is required for the symbol to move to or from the Stage.

   This tells you where to place the ending frame for the motion tween.
4. Insert the ending frame accordingly on the Timeline (**Figure 1**).

   Note: If you are calculating in seconds, be sure to note the frame rate (fps) at the bottom of the Timeline. By default, Flash sets new documents to 12 frames per second.
5. Select the layer in the Timeline and select Insert > Motion Tween.
6. In the last keyframe, use the Selection tool to move the object to its ending position (**Figure 2**). Notice the appearance of the motion path.

   Note: You might want to add multiple effects, such as changing size or fading to make the object appear to grow or fade in while it enters or fade out and shrink as it exits.

   - *Changing size:* Reduce or increase the image percentage in the Transform panel with the Constrain options selected.
   - *Fading:* Select the symbol and select Alpha from the Style menu in the Color Effect section of the Property inspector. Adjust the alpha setting to increase or decrease transparency.

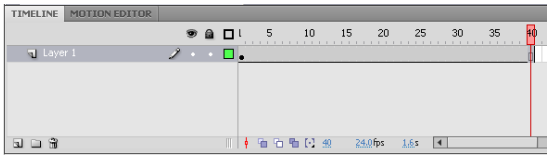

Figure 1 Flash Timeline

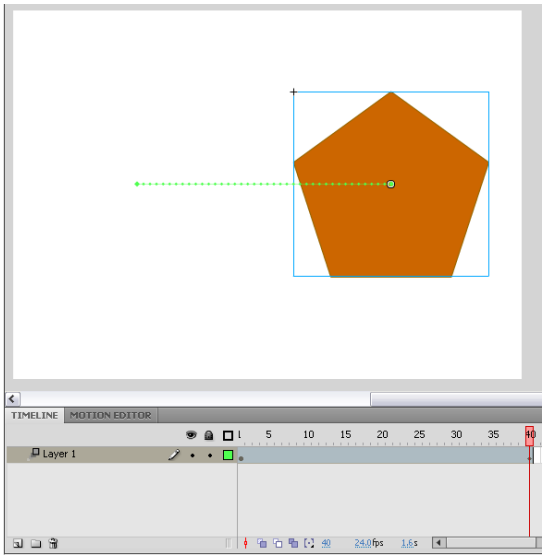

Figure 2 Motion tween end position

7. With the tween layer selected, display the Rotation section of the Property inspector. Select CW (clockwise) or CCW (counterclockwise) from the Direction pop-up menu (**Figure 3**).
8. For Rotate, enter the number of times you want the symbol to rotate (**Figure 4**).
9. In the Options section, select the Sync Graphic Symbols option.

   This synchronizes the motion to the number of frames in the Timeline.
10. Save the movie.
11. Select Control > Test Movie to test the movie.
12. Select File > Close to close the preview window.

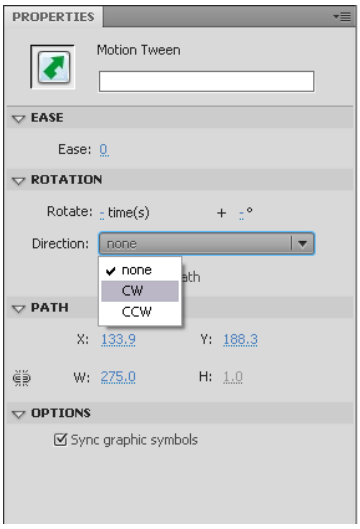

Figure 3 Direction menu in the Rotation section

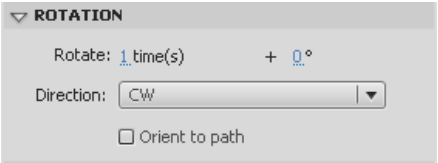

Figure 4 Rotate parameter

Change frame rate

The document's *frame rate* determines how fast the playhead moves. By default, frame rate is set at 12 frames per second (*fps*), which usually gives the best results on the web. You can change this to any number between 0.01 and 120. QuickTime and AVI movies generally have a frame rate of 12 fps, while the standard motion picture rate is 24 fps. Performance of a Flash movie is likely to suffer at frame rates of 16 fps or higher. With larger movies, increasing the frame rate increases the size of your published document.

In short, if you want to change the timing of an animation, it's usually better to change the number of frames than to change the frame rate.

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To change the frame rate:

1. Select Edit > Deselect All to make sure no objects are selected.

   The Property inspector switches to Document.

2. For FPS (in the Properties section), type **15** and press Enter (Windows) or Return (Mac OS).

   Note: It is generally best to keep frame rate to 16 or less.

3. Select Control > Test Movie to test the movie.

   Observe that the animation plays faster.

4. Change the FPS value to **6** and press Enter (Windows) or Return (Mac OS).

5. Select Control > Test Movie to test the movie.

   Observe that the animation plays much more slowly.

6. Select File > Close to close the preview window.

Fading

By creating a motion tween with different alpha settings, you can fade images in and out.

To fade images in and out:

1. Start Flash and open the document you want to edit.

2. Locate the layer and keyframe that contain the symbol you plan to fade.

   This will be the starting frame for the fade.

3. Make sure the symbol is alone on its own layer.

4. Decide how much time is required for the symbol to complete the transition.

   This tells you where to place the ending frame for the motion tween.

5. Insert the ending frame accordingly on the Timeline. Then, with the layer selected, select Insert > Motion Tween.

   Note: If you are calculating in seconds, be sure to note the frame rate (fps) at the bottom of the Timeline. By default, Flash sets new movies to 12 frames per second.

6. Select the starting frame for the transition and click on the symbol to select it.

7. Display the Motion Editor by clicking the Motion Editor tab next to the Timeline tab (**Figure 5**). Or select Window > Motion Editor.

Figure 5 Timeline and Motion Editor tabs

Note: The Motion Editor displays all tween properties and their property keyframes. It also provides tools for adding precision and detail to tweens. The Motion Editor displays the properties of the currently selected tween.

8. In the Motion Editor, click the plus icon and select Alpha in the Color Effect tab (**Figure 6**).

9. Adjust the Alpha slider down to 0% (**Figure 7**).

Note: The object will disappear from the Stage, but the blue outline is visible when the symbol is selected.

10. Return to the Timeline and select the final frame and adjust the Alpha of the symbol to 100% using the Motion Editor.

11. Save the movie.

12. Select Control > Test Movie to test the movie.

The symbol fades in.

Note: To create a fade-out, leave the Alpha Amount setting at 100% on the starting keyframe and change the Alpha Amount setting on the ending keyframe to 0%.

13. Select File > Close to close the preview window.

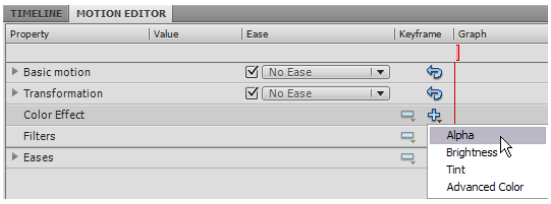

Figure 6 Motion Editor Alpha controls

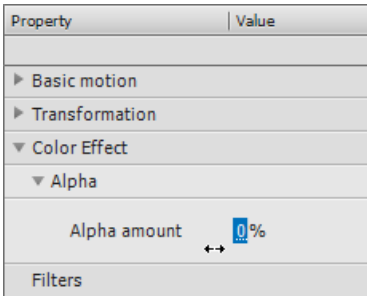

Figure 7 Alpha Amount slider

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Color fades

You can use color fades to draw the viewer's attention to an object onscreen. To create a color fade, apply a motion tween between two instances of the same symbol, and then change the color of the instances in the starting and ending frames.

To create a color fade:

1. Start Flash and open the document you want to edit.
2. Locate the layer and keyframe that contain the symbol.

   This will be the starting keyframe for the color fade.
3. Make sure the symbol is alone on its own layer.
4. Decide how much time is required for the symbol to complete the transition.

   This tells you where to place the ending frame for the motion tween.
5. Insert the ending frame accordingly in the Timeline. Select the layer in the Timeline and choose Insert > Motion Tween.

   Note: If you are calculating in seconds, be sure to note the frame rate (fps) at the bottom of the Timeline. By default, Flash sets new movies to 12 frames per second.
6. Select the starting frame for the transition and select the symbol.
7. In the Motion Editor, click the plus icon and select Adjust Color in the Filters tab (**Figure 8**).
8. Use the Hue slider to select a new color by changing the value. (**Figure 9**).

   As you change the value, notice the changing color of the symbol on the Stage.
9. When you have selected a color, save the movie.
10. Select Control > Test Movie to test the movie.
11. Select File > Close to close the preview window.

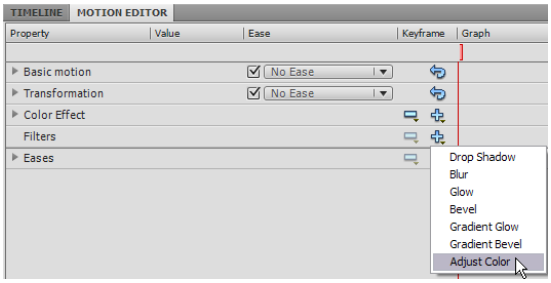

Figure 8 Adjust Color in the Filters section

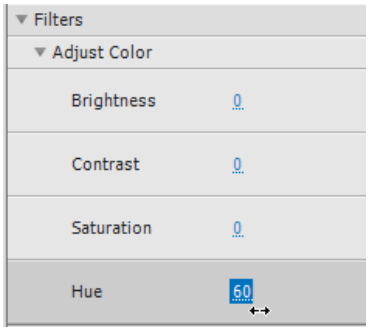

Figure 9 Hue slider

Flipping images

Flipping images and then creating a motion tween can create an effective transition between images of roughly the same size. The trick is to flip the first image half way and then start fading in the second image while the first image is still flipping to make a smooth transition.

To flip an image:

1. Start Flash and open the document you want to edit.
2. Locate two image symbols on different layers that you plan to transition between: the entering object and the exiting object (**Figure 10**). Position the symbols in roughly the same position on the Stage
3. Decide how much time is required to complete the transition.

   This tells you where to place the ending frames for each of the images for the motion tweens.
4. Insert the ending frames accordingly in the Timeline. For each image, select the layer in the Timeline and choose Insert > Motion Tween.
5. Select the first motion tween in the first layer. In the Motion Editor, choose the Alpha color effect and set the image to 0% (**Figure 11**).
6. Select the second motion tween in the second layer and change the Alpha color effect of this image to 100%.
7. Click on the last frame for the first image in the Timeline and set the Alpha color to 100%.
8. Click on the last frame for the second image in the Timeline and set the Alpha color to 0%.
9. In the middle of the Timeline, select the exiting object on the Stage and select Modify > Transform > Flip Horizontal (**Figure 12**).

   Note: Instead of Flip Horizontal, you can select Flip Vertical. As long as both exiting and entering objects flip the same way, the transition will work. Select the same type of flip for the entering object as for the exiting object.
10. Click the first frame of the entering object's motion tween. Display the Eases section of the Motion Editor and change the Simple (Slow) easing to –100% (**Figure 13**).

    Changing the easing value adjusts the rate of change between tweened frames. Negative easing values cause the motion tween to begin slowly and accelerate at the end of the tween. A positive value causes the tween to begin rapidly and decelerate at the end. The animation still takes the same amount of time, regardless of the easing value.

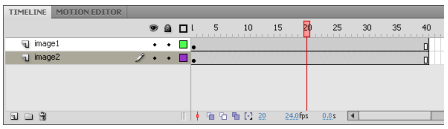

Figure 10 Two image symbols in two layers

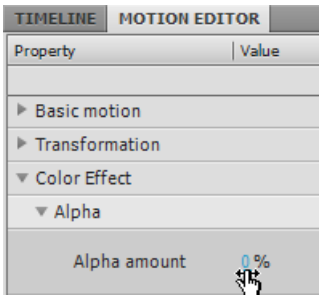

Figure 11 Setting the image Alpha settings

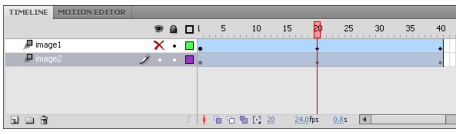

Figure 12 Inserting the flip transition in the mid-point of the Timeline

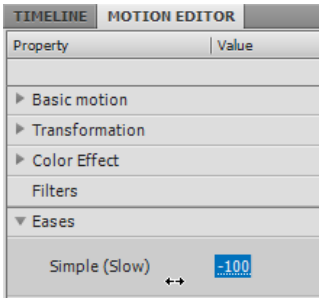

Figure 13 Eases section of the Motion Editor

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11. Select Control > Test Movie to test the movie.

12. Select File > Close to close the preview window.

Motion presets

You can also add motion presets to your tweened symbol. Motion presets are preconfigured motion tweens you can apply to an object on the Stage. You simply select the symbol and click the Apply button in the Motion Presets panel.

To add a motion preset to your symbol:

1. Open an existing Flash document or create and save a new Flash document.

2. Create a shape and convert to symbol.

3. Display the Motion Presets panel by selecting Window > Motion Presets.

You can preview the Motion Presets by clicking on a preset from the list of Default Presets (**Figure 15**)

4. To apply a motion preset to the symbol on the stage, click the Apply button.

5. Click the Motion Editor tab to find the properties for the preset you have just applied. Make any changes you like in the Motion Editor.

6. After making changes to any motion settings in the Motion Editor, save your customized motion preset by clicking the Save Selection As Preset icon in the lower left corner of the Motion Presets panel (**Figure 16**).

7. Type a name for your custom preset and click OK.

You will now see your motion preset under the Custom Presets folder of the Motion Presets panel. You can apply your custom motion presets to other tweens in this file or new files. Using presets can save significant production time during design and development of your projects, especially if you use similar kinds of tweens often.

8. Save the movie.

9. Select Control > Test Movie to test the movie.

10. Select File > Close to close the preview window.

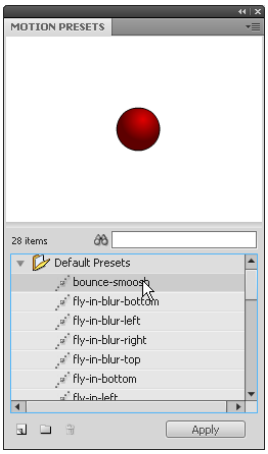

Figure 15 Motion Presets panel

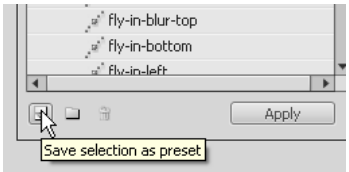

Figure 16 Save Selection As Preset icon

How to create visual effects

With Adobe Flash CS4 Professional filters (graphics effects), you can add interesting visual effects to text, buttons, and movie clips. You can change text, shapes, and symbols in many ways by adding filters. This guide illustrates how to apply specific effects to shapes, how to edit effects, and how to remove effects. You can apply any number of effects by using this technique.

To create a visual effect:

1. Open an existing Flash document or create and save a new Flash document.
2. From the Tools panel, select the Rectangle tool (**Figure 1**).
3. For the Rectangle tool, specify rounded corners by clicking the Round Rectangle modifier in the Property inspector and entering a corner radius value, such as 25 (**Figure 2**).

   A value of zero (0) creates square corners.
4. To create a rectangle shape, drag the Rectangle tool on the Stage.

   For the Rectangle tool, Shift-drag to constrain the shape to squares. (Similarly, you can draw perfect circles by Shift-dragging the Oval tool.)
5. You will need to convert the shape to a symbol. Select the rectangle or several elements on the Stage. Do one of the following:
   - Select Modify > Convert To Symbol.
   - Drag the selection to the Library panel.
   - Right-click (Windows) or Control-click (Mac OS) and select Convert To Symbol from the context menu.

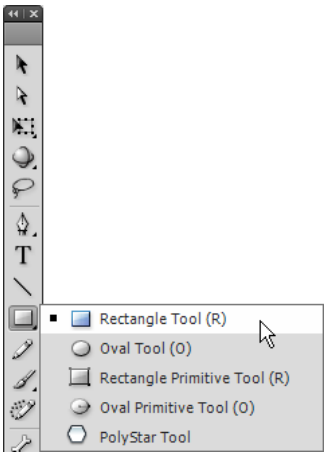

Figure 1 Shape tool options

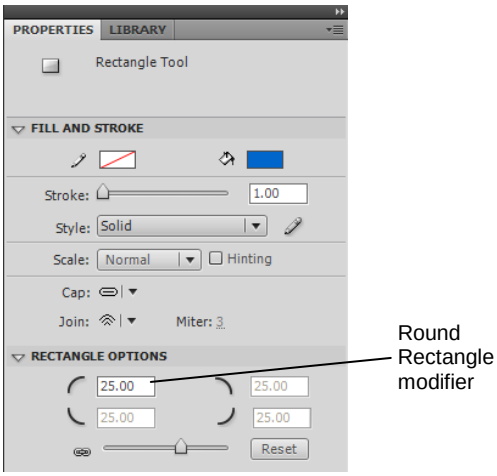

Figure 2 Adjust rectangle options

6. In the Convert To Symbol dialog box, type the name of the symbol and select the Movie Clip type (**Figure 3**).

   Note: Symbol types include Movie Clip, Button and Graphic, and provide different filter options.

   - Use graphic symbols for static images and to create reusable pieces of animation that are tied to the main Timeline.
   - Use button symbols to create interactive buttons that respond to mouse clicks, rollovers, or other actions.
   - Use movie clip symbols to create reusable pieces of animation.

7. Click OK.

   Flash adds the symbol to the library and switches to symbol-editing mode. In symbol-editing mode, the name of the symbol appears above the upper left corner of the Stage, and a cross hair indicates the symbol's registration point.

8. Select the rectangle object to apply a filter.

9. In the Filters section of the Property inspector, click the Add Filter (+) button, and select a filter, such as the Bevel filter (**Figure 4**).

   The filter is applied to the object (**Figure 5**).

10. Experiment with the filter settings (**Figure 6**) until you get a look you like (**Figure 7**).

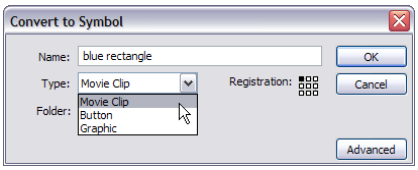

Figure 3 Convert To Symbol dialog box

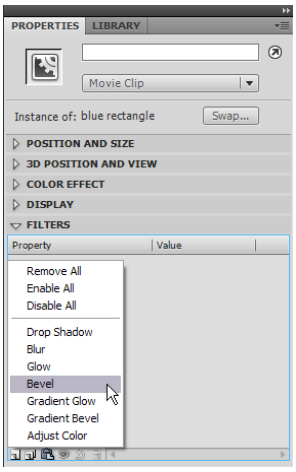

Figure 4 Add Filter menu in the Property inspector

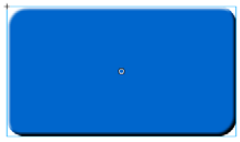

Figure 5 Bevel filter applied to rectangle

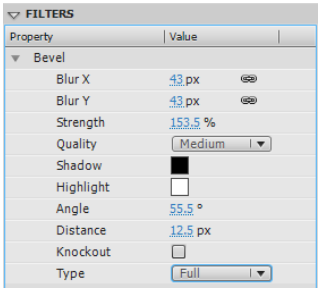

Figure 6 Bevel filter settings

Figure 7 Modified Bevel filter applied to rectangle

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Removing and disabling visual effects

You can remove or disable an effect after you have applied it.

To remove or disable an effect:

1. Select the object from which you want to remove a filter.
2. Click the delete icon at the bottom of the Filters section of the Property inspector (**Figure 8**).

   The effect is removed.

   You can also enable or disable a filter applied to an object by clicking the Enable or Disable Filter icon.

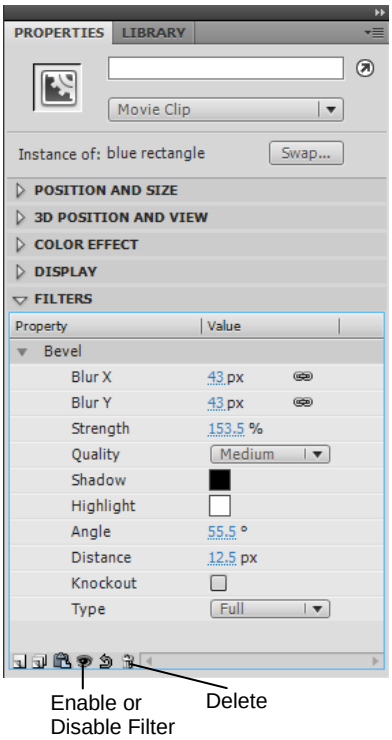

Figure 8 Disable/enable or delete a filter

How to use filmmaking techniques

Web designers have an entire history of filmmaking techniques to draw from and inspire them when creating websites and digital movies. With Adobe Flash CS4, you can simulate traditional film techniques. As you design Flash movies, think of creative ways to incorporate these effects and look for opportunities to create new effects that may in turn inspire traditional filmmaking.

You can create the following popular filmmaking techniques with Flash:

- *Pan, tilt, and zoom effects:* Moving the camera horizontally across a scene is known as a pan. Moving the camera up or down across a scene is known as a tilt. Moving the camera away from or toward a subject in a scene is known as a zoom.
- *Camera angles:* Using the rule of thirds and adjusting the viewing angle can help emphasize a certain aspect of your subject.
- *Cross fades:* One image appears to fade in while another fades out, a transitional effect for moving from one image to another.
- *Bounce effect:* A moving object rebounds before stopping. This technique grabs attention and can focus viewers on an area of the screen. This effect is sometimes combined with a sudden sound effect, such as a “boing” or tire screech.

Create a pan, tilt, or zoom effect by using classic tweens

To set a scene in a movie, the camera moves over a large scene and then zooms in to a specific point. A pan (or tilt) followed by a zoom is a good technique to introduce a digital narrative. Zooming in focuses the viewer’s attention on a particular part of the image.

To create a pan and zoom effect:

1. Open an existing Flash document or create and save a new Flash document.
2. To import an image directly into the current Flash document, select File > Import > Import To Stage.
3. If your image is not already a symbol, convert it to a movie clip symbol (**Figure 1**). Place the symbol on the right side of the workspace, covering the Stage.

   Be sure the Stage is smaller than the image.
4. In the Timeline, select the keyframe where you want the pan to end and select Insert > Timeline > Keyframe (**Figure 2**).
5. Select the ending keyframe. Drag the instance of the movie symbol to the opposite side of the workspace.

Figure 1 Image converted to symbol

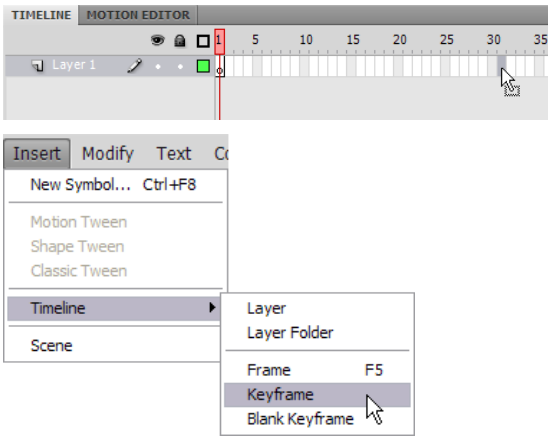

Figure 2 Insert a keyframe

6. Click in the Outline column to the right of the name for the layer that contains the movie symbol (**Figure 3**).

   Note: You can more easily see the border of an image if you set the layer holding the image to outline mode (especially if the image contains a lot of grays that can fade into the area outside the Stage). Be sure the image does not slide off the Stage during a pan.

7. Select the starting frame and select Insert > Classic Tween.

   This classic tween moves the movie symbol horizontally across the Stage (a pan). The second keyframe that ends the classic tween will also serve as the starting point for the next tween.

8. Add a third keyframe further along in the time line to serve as the ending point of the second classic tween (a zoom) (**Figure 4**).

9. Select the third keyframe and select Modify > Transform > Scale to display the Transform panel.

   Transformation handles appear on the image (**Figure 5**).

10. Shift-drag one of the corner transformation handles to resize the image approximately three times its original size.

    The image expands.

11. Select the second keyframe and select Insert > Classic Tween creating a classic tween between the second and third keyframes.

12. In the Property inspector, increase the easing to a value between 60 and 100 for the classic tween (**Figure 6**).

    The zoom will start quickly and slow down as it arrives at the resting point.

13. In the Timeline panel, click the New Layer button.

14. Rename the new layer **actions** (**Figure 7**).

15. Select the last frame of the actions layer and insert a new keyframe.

Figure 3 Image outlined

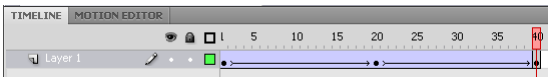

Figure 4 Keyframe for zoom

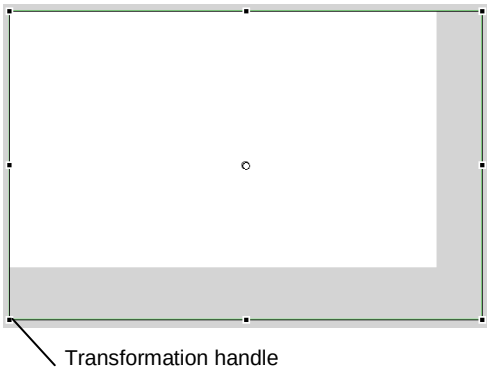

Figure 5 Outline image with transformation handles

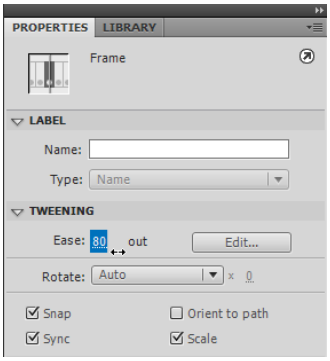

Figure 6 Property inspector

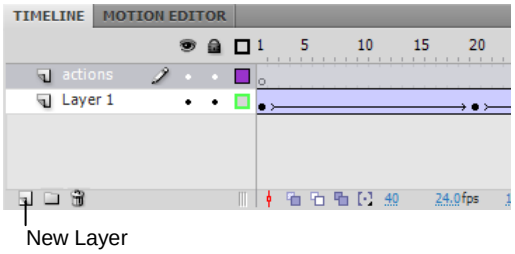

Figure 6 New Layer button in the Timeline

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16. Select Window > Actions to display the Actions panel.

The Actions panel opens (**Figure 7**).

Note: If the Actions toolbox is hidden, click the triangle or drag the vertical bar to open. If you don't see the parameters area in the Actions panel, click the Script Assist button.

17. You need to place a stop command at the end of the timeline to end the movie clip. In the Actions toolbox on the left side of the panel, choose flash.display > MovieClip > Methods.

18. Double-click or drag the stop item to the script window

The code for the stop method appears in the script window.

Note: You can also locate the stop and other methods by using the Index located at the bottom of the Actions toolbox

19. In the Script pane, select the stop method. Then click in the Object text box in the parameters area of the Actions panel.

The Insert Target Path button is now active.

20. Click the Insert Target Path button.

The Insert Target Path dialog box appears (**Figure 8**).

21. Select the Relative option and select the movie clip you want to play when viewers click the button. If you want the movie in the main timeline to play, select root to set the target path to `this`.

21. Click OK to close the Insert Target Path dialog box.

The Script pane shows the correct code for stopping the movie (**Figure 9**).

22. Close the Actions panel.

21. To test how the SWF file works before you publish your SWF file, use Test Movie (Control > Test Movie) and Test Scene (Control > Test Scene).

22. Select File > Close to close the preview window.

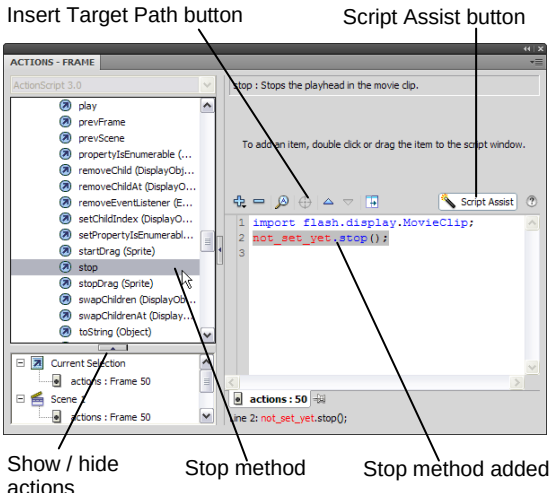

Figure 7 *Stop* method in the Actions panel

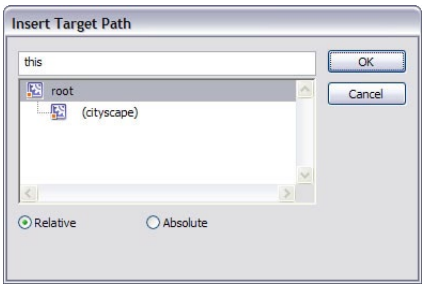

Figure 8 Insert Target Path dialog box

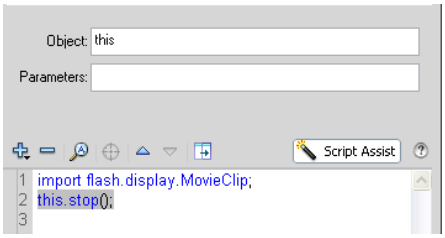

Figure 9 Stop method in the Script pane

Adding frame labels

You may want to add frame labels to the keyframes. Frame labels help you and other designers remember what is happening in a particular frame.

To add a frame label:

1. Add a new layer called **labels** as the top layer of the Timeline. Insert > Timeline > Blank Keyframe in this layer to correspond with each of the motion keyframes that drive the animation. A blank keyframe acts as a placeholder for symbols you plan to add later or intend to leave the empty.
2. Select a blank keyframe in the labels layer. Then in the Property inspector, type the label name in the Name text box (**Figure 10**).

   The label appears along the Timeline in the frames after the blank keyframe (**Figure 11**).
3. Turn off outlining, save the file, and select Control > Test Movie.

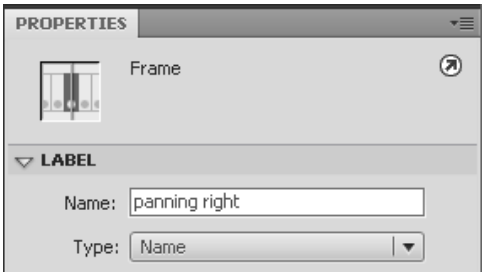

Figure 10 Frame Name text box in Property inspector

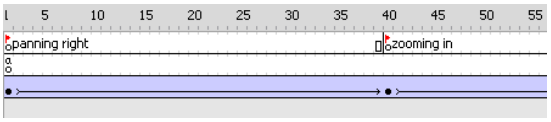

Figure 11 Frame labels in Timeline

Further ideas

- *For a documentary:* Slow the process down to reflect the pace of the narrative. For example, a slow pan and zoom go well with a documentary style narrative.
- *For humor or action:* Make the zoom-in portion of the pan quick and somewhat unsteady, as if you are looking for the subject of the scene. You might zoom in and out several times during a pan to show you are looking for something.
- *For drama:* Pan or tilt the scene without a zoom. This method presents a sweeping landscape, such as a mountain range leading to the ocean. Because it takes in the majority of the landscape, the effect adds depth and seriousness to the tone of the narrative.

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Camera angles

When you have several images on the screen in a digital narrative, you can use some tricks for emphasis. Use the rule of thirds and adjust the viewing angle to emphasize a certain aspect of the subject.

- The *rule of thirds* states that if you divide the screen into a 3-by-3 grid, the intersections of the lines are areas where the eye will focus. Line up the items of focus at these intersections on the screen.
- You can add importance to a subject by presenting the subject as seen from below. Likewise, you can diminish the importance of a subject as seen from above.

Even though the girl isn't in the center of **Figure 12**, she catches your eye because she is near the intersection of the rule-of-thirds lines.

Looking up at the man having a moment in **Figure 13** makes him look powerful. Angling the camera down on him would make him look smaller and less powerful.

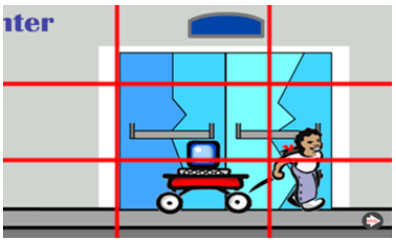

Figure 12 Rule of thirds

Figure 13 Camera angle

Create cross fades by using classic tweens

A transitional effect for moving from one image to another is to fade one image out as you fade the other in.

To create a cross fade:

1. Open an existing Flash document or create and save a new Flash document.
2. Import two images into the current Flash document, select File > Import > Import To Stage.
3. Convert the two images to be cross-faded into symbols, and place them on separate layers.
4. Insert keyframes in both layers at the same point in the Timeline to mark the beginning of the fade-out of the first image and the fade-in of the second image.
5. Decide how long you want the transition to last. Insert keyframes in both layers at the same point in the Timeline to mark the end of the fade-out of the first image and the fade-in of the second image.
6. Select the first keyframe for the image that will fade out, select the image, and use the Property inspector to set its alpha level to 100% (**Figure 14**).

   Note: If your images are in the same position on the Stage, you need to hide the top layer before you can select the symbol in the bottom layer. Selecting your images is easier if they are offset on the Stage.
7. Select the first keyframe for each image and insert a classic tween.
8. Select the first keyframe for the image that will fade in and set its alpha level to 0%.
9. Select the last frame for the image that will fade in and set its alpha level to 100%.
10. Select the last frame for the image that will fade out and set its alpha level to 0%.
11. Add Frame labels to the first keyframes of each classic tween (**Figure 15**).

    The labels appear on the Timeline (**Figure 16**).

    Note: You can make the fade-out start after the fade-in or vice versa. You can also extend the fade-out to end in the same frame as the end of the fade-in.

    If the images zoom in or out before the fade-out, you probably want to continue the zooming process during the fade.
12. Save the movie.
13. Select Control > Test Movie to test the movie.
14. Select File > Close to close the preview window.

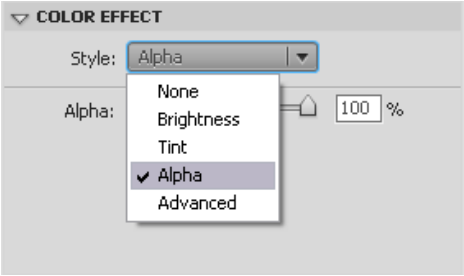

Figure 14 Applying an Alpha level in the Color Effect Style menu

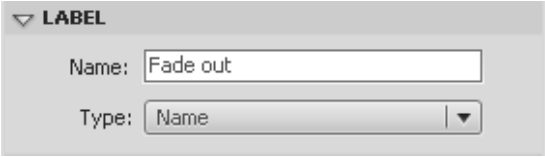

Figure 15 Frame label text box

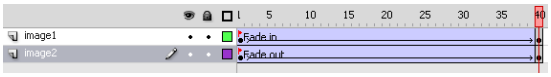

Figure 16 Frame labels in Property inspector

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Create a bounce effect by using classic tweens

Some animated text and images that move onto the Stage will seem more lifelike if you add a little bounce to them when they reach their stopping point. This is an old animation technique acknowledging that any moving object carries momentum and thus rebounds a bit before it comes to a stop. This technique also grabs attention and can focus viewers on an area of the screen.

To create a bounce effect:

1. Open an existing Flash document or create and save a new Flash document.
2. Begin by adding a symbol to the Stage. By default the symbol is placed in the first keyframe of the timeline.
3. Select a second frame along the timeline.
4. Select Insert > Timeline > Keyframe.
5. Make sure the new frame is still selected and move the symbol to a new position on the Stage.
6. Click on the tween span on the Timeline and select Insert > Classic Tween.

   The classic tween appears as light blue with an arrow
7. Label the starting keyframe for the classic tween *move right* or *move left* (**Figure 17**) and label the second keyframe *bounce*.
8. Insert a keyframe 3–5 frames after the end of the classic tween. Label this frame *back*.
9. Insert another keyframe 8–10 frames after the end of the original classic tween. This will be the final resting point of the image. Label this frame *end*.

   Note: If you want the final bounce back into place to take longer (more frames) so the object appears to slow down, insert the keyframe in this step farther down the Timeline.
10. Select the keyframe labeled Back.
11. In this keyframe, select the symbol instance on the Stage and use the arrow keys to move the instance 5–10 key presses back in the direction it came from.
12. Create classic tweens between all the keyframes by clicking on each tween span and selecting Insert > Classic tween.
13. Add an actions layer to the top of the Timeline.

Figure 17 Frame label

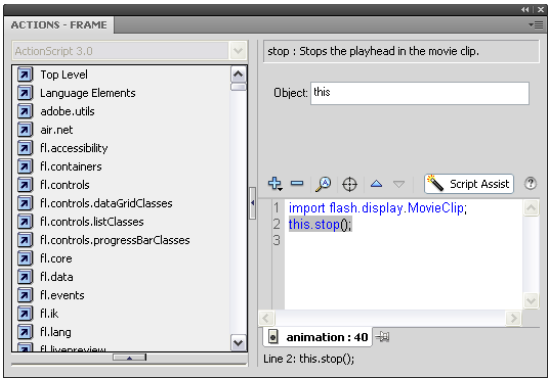

Figure 18 Actions panel

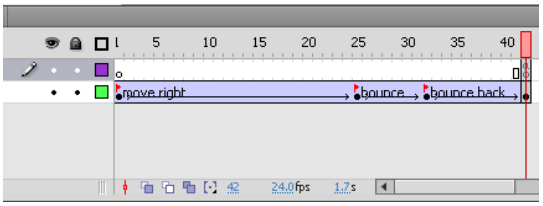

Figure 19 Final timeline

14. On this layer, insert a keyframe after the last frame and add a *stop* action. In the Actions toolbox on the left side of the panel, choose flash.display > MovieClip > Methods

15. Double-click or drag the stop item to the script window

The code for the stop method appears in the script window.

16. In the Script pane, select the stop method. Then click in the Object text box in the parameters area of the Actions panel.

The Insert Target Path button is now active.

17. Click the Insert Target Path button.

The Insert Target Path dialog box appears.

18. Select the Relative option and select the movie clip you want to play when viewers click the button. If you want the movie in the main timeline to play, select root to set the target path to this.

19. Click OK to close the Insert Target Path dialog box.

The Script pane shows the correct code for stopping the movie (**Figure 18**).

The Timeline should appear as it does in **Figure 19**.

20. Close the Actions panel.

21. To test how the SWF file works before you publish your SWF file, use Test Movie (Control > Test Movie) and Test Scene (Control > Test Scene).

22 Select File > Close to close the preview window.

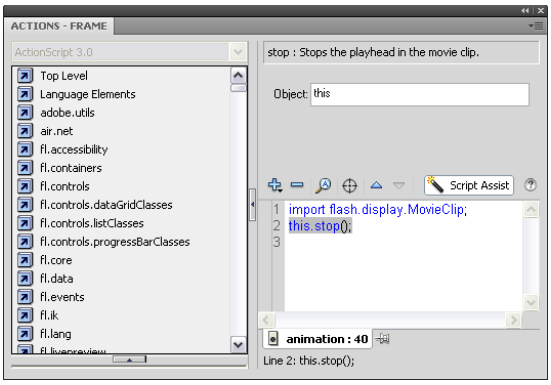

Figure 18 Actions panel

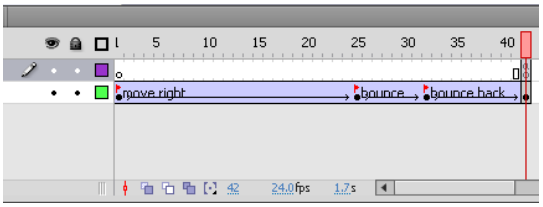

Figure 19 Final timeline

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How to produce Flash video for use on the web

Adobe Flash CS4 provides a number of options for importing and publishing video with a Flash movie.

You can import the following video formats:

- Video for Adobe Flash (.flv, .f4v)
- 3GPP/3GPP2 for mobile devices (.3gp, .3gpp)

You can import the following video formats if you have QuickTime 7 or later installed (Windows and Mac OS):

- Audio Video Interleaved (.avi)
- Digital Video (.dv)
- Motion Picture Experts Group (.mp4, .m4v, .avc)
- QuickTime Movie (.mov, .qt)

You can import the following file formats if you have DirectX 9 or later installed (Windows only):

- Audio Video Interleaved (.avi)
- Motion Picture Experts Group (.mpg or .mpeg)
- Windows Media File (.wmv, .asf)

Deploying video

How you choose to deploy your video determines how you create your video content and how you integrate it with Flash. You can incorporate video into Flash in the following ways:

Progressively download video from a web server: Flash creates a Flash video file that downloads from a regular web server and plays within the published SWF file.

Stream video with Adobe Flash Media Server: This option produces the overall best performance; however, it requires either the Flash Media Server or a subscription to a Flash Video Streaming service. See the Adobe website for more information: www.adobe.com.

Embed video in the Flash document: You can embed a small, short-duration video file directly into the Flash document and publish it as part of the SWF file. Embedding video content directly into the Flash SWF file significantly increases the size of published file and is only suitable for small video files (typically less then 10 seconds in length).

To encode your video for Flash:

1. Open an existing Flash document or create and save a new Flash document.

   Note: You must save the Flash document before you begin the video import process.

2. Select a keyframe on the layer in which you want to import the video.

   This is where the video player will be located after the video import is complete.

3. Click File > Import > Import Video.

   The import Video dialog box appears (**Figure 1**).

4. Click the Launch Adobe Media Encoder button.

   The Adobe Media Encoder appears (**Figure 2**).

5. In the Media Encoder, click the Add button and browse to the location for the video file you want to encode.

6. Choose an appropriate Format, Preset (**Figure 3**), and Output File location in the Media Encoder.

7. Click the Start Queue button to begin encoding.

   When the encoding process is complete, close the Adobe Media Encoder.

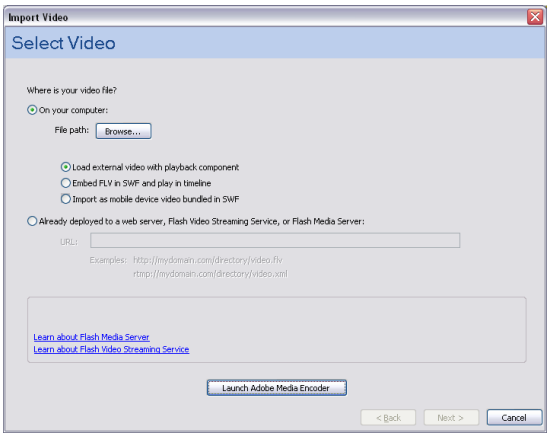

Figure 1 Import Video dialog box

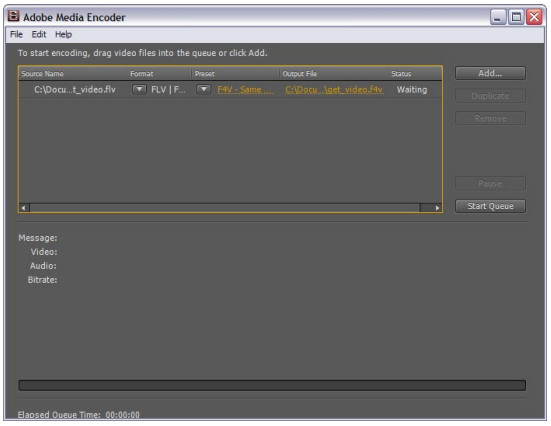

Figure 2 Adobe Media Encoder

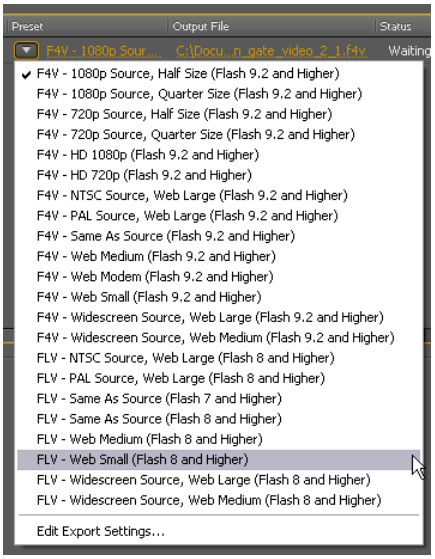

Figure 3 Preset options for encoding video

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To use progressive download:

1. Click File > Import > Import Video.

   The import Video dialog box appears (**Figure 4**).

2. Click the browse button to find the location for the newly encoded video file you want to import.

   You can use a video file located either on your computer or on the Internet.

3. Select Load External Video With Playback Component.

   This option progressively loads your external video file into your Flash document.

4. Click Next (Windows) or Continue (Mac OS).

   The Skinning page of the Import Video wizard appears (**Figure 5**).

   The video's skin determines the location and appearance of the video controls. Visitors see this skin when Flash plays the video.

5. Select a skin from the Skin pop-up menu.

6. Select a skin color from the color picker.

7. Click Next (Windows) or Continue (Mac OS).

   The Finish Video Import page of the Import Video wizard appears. This page confirms the location of the Flash video file.

8. Click Finish.

   The FLVPlayback object appears on the Stage (**Figure 6**).

9. Select Control > Test Movie to see it play.

   The video plays in the Flash Player window. You can use the controls to stop, pause, fast forward, rewind, and change the volume of the video.

10. Select File > Close to close the preview window.

11. Open the folder in which you saved the Flash document.

    This folder now contains two new files: an FLV file and a SWF for the video's skin. (The skin will be called something like MojaveOverAll.swf.) When you publish your Flash document, you need to copy both of these files to the same location as the Flash document.

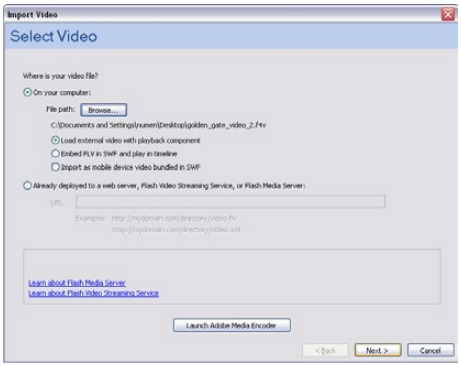

Figure 4 Import Video wizard, Select Video page

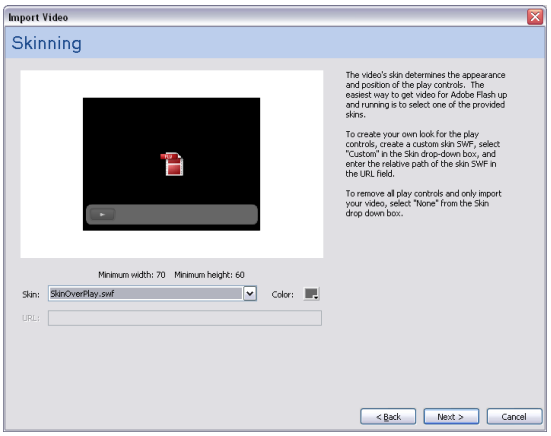

Figure 5 Import Video wizard, Skinning page

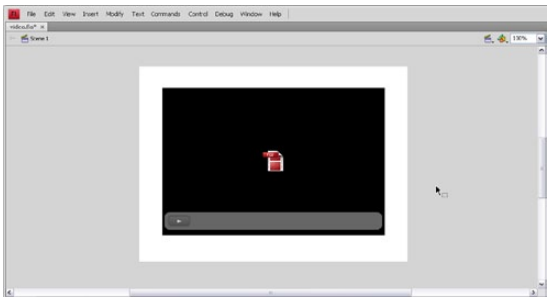

Figure 6 FLVPlayback object on Stage

Embedding video within SWF files

When you select the embedded video option, Flash converts video to Timeline frames. When the SWF file is published, the video is fully contained in that file. Unlike progressive download, embedded video requires no external file and so is easier to deploy. However, because embedded video often has problems with audio synchronization after 120 frames, Adobe recommends embedded video in only three cases:

- When you want visitors who have Flash 5 to be able to view your video
- When you must have one single file that encapsulates the video and the Flash content
- When your video clip is less than 5 seconds long

These situations are not common. In all other situations, embedded video is not recommended.

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