

LESSON 4: SCENES, ACTIONS, AND BUTTONS

OBJECTIVES

When you have finished this section, you will understand:

- why breaking a movie into scenes saves time
- the four button states
- how actions make buttons interactive

and you will have learned:

- how to insert a scene
- how to use the Scene Inspector
- how to rename a scene and how to change the order of scenes
- how to attach an action to a frame
- how to attach an action to one state of a button
- how to use the Stop and Go To commands

EXERCISES

SCENES

Scenes provide a way to divide and conquer a big project so it doesn't get out of control. You can use scenes to organize the movie thematically. Because each scene has its own layers and Timeline, you work with smaller, more manageable chunks—especially important when you begin revising and making changes. You can easily see how much time you would waste scrolling through a Timeline with a thousand frames or more than 50 layers.

Each scene also has its own artwork, so when artwork is shared between scenes, be sure you use symbols. Without symbols, the artwork must be duplicated, making your final movie larger and slower.

In this exercise you will create a scene for the beach graphic your traced in Lesson 2.

To use scenes to organize a movie:

1. Open boat21.fla from the Lesson4 folder.
2. Choose **Insert > Scene** to create a new scene (see Figure 4-1).

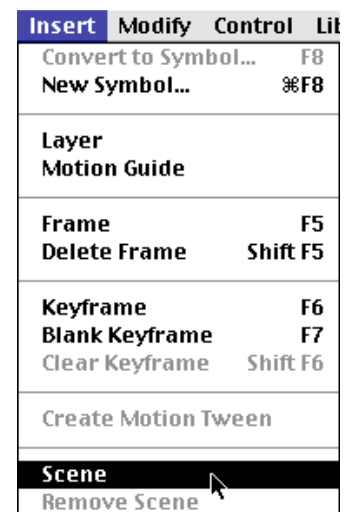


Figure 4-1
Creating a new scene.

The new scene has an empty **Stage** with the pale yellow background chosen for the movie, an empty **Timeline**, and one empty layer. The **Library** is unchanged. At the top of the **Timeline** is a tab with the name of the new scene, **Scene 2** (see Figure 4-2).

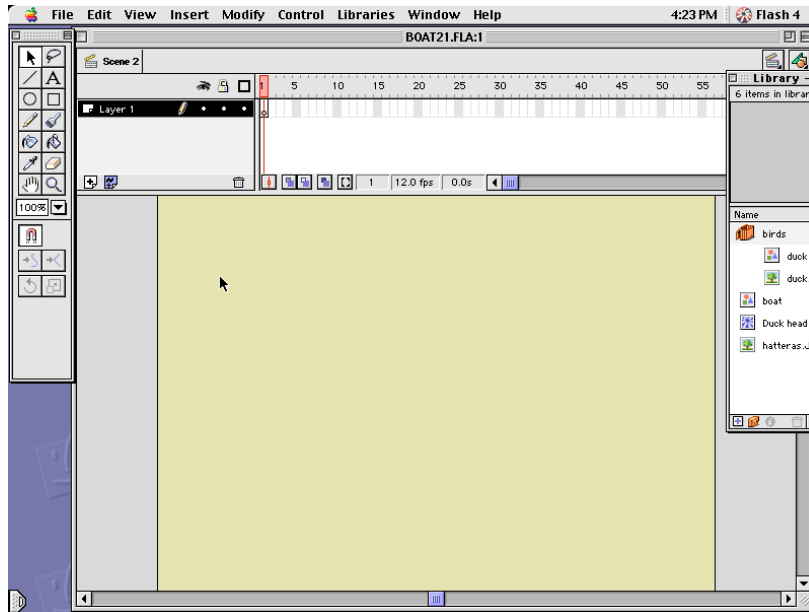


Figure 4-2
The new scene has an empty Timeline and one empty layer.

3. Choose the **Edit Scene** icon. It is in the upper right corner of your screen above the **Timeline**. It looks like the clapper boards used to signal Take 1 in making a movie.
Two scenes are listed in the **Scene Edit** pop-up menu: Scene 1 and Scene 2.
4. Click on **Scene 1** in the **Scene Edit** pop-up menu to return to Scene 1 (see Figure 4-3).

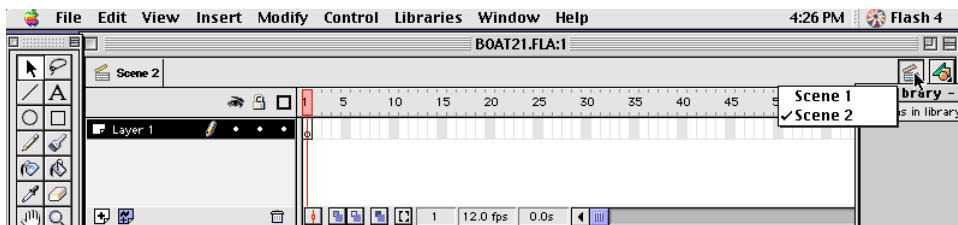


Figure 4-3
Click on Scene 1 in the Scene Edit pop-up menu to return to Scene 1.

5. Drag downward on the bottom of the **Timeline** to expand it until you can see all six layers.
6. Click in the first frame of the **Beach** layer.
7. **Right-click** (PC) or **Cmd+click** (Mac) in the highlighted frame and choose **Copy Frames** from the pop-up menu (or choose **Edit > Copy Frames**).

- Choose **Scene 2** in the **Scene Edit** pop-up menu and select the first frame of Layer 1 (see Figure 4-4). **Right-click** (PC) or **Cmd+click** (Mac) and choose **Paste Frames** (or choose **Edit > Paste Frames**).

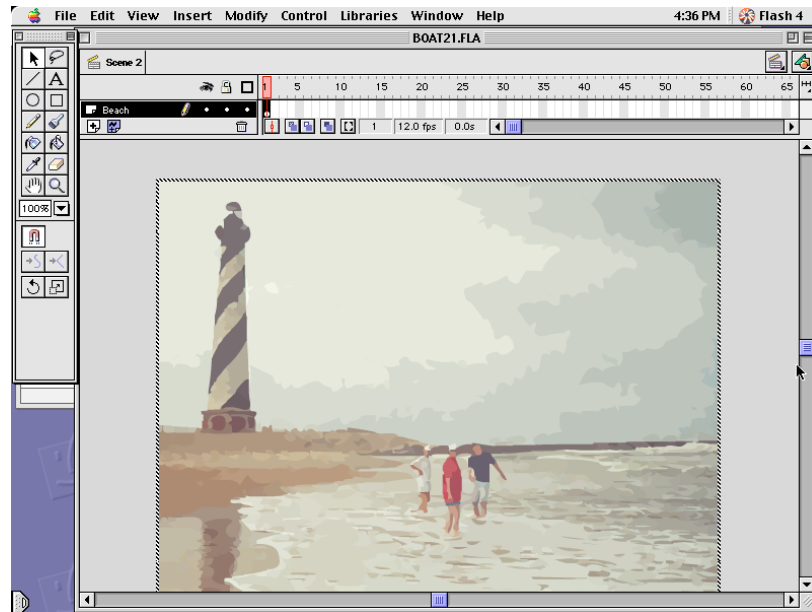


Figure 4-4
Select the first frame in layer 1 of Scene 2.

- Save as boat22.fla in the My Work folder. Close the file.

To clean up Scene 1:

- Open boat22.fla from the My Work folder or the Lesson4 folder.
- Choose **Windows > Inspectors > Scene**.
The **Scene Inspector** opens.
- Choose **Scene 1** from the **Scene Inspector** and select the **Beach** layer. Click on the **Trash can** at the bottom of the **Timeline** to delete the layer (see Figure 4-5).
The Beach layer will not be needed in Scene 1.

Note: Even though the Beach layer is locked, you can delete it.

- Drag the bottom of the **Timeline** up until you see only the five layers of the **Timeline**.
- Save your file as boat23.fla in the My Work folder. Close the file.

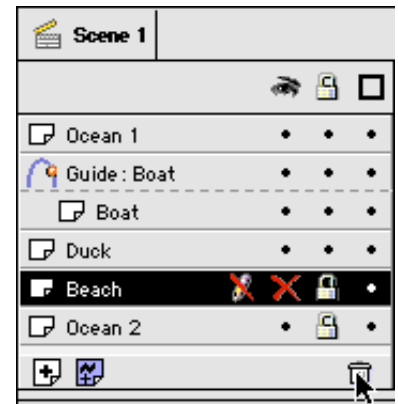


Figure 4-5
Clicking on the Trash button deletes the selected layer.

In the next exercise, you will rename the scenes and change their order in the Scene Inspector. When a movie is divided into scenes, the scenes are played in the order in which they appear in the Scene Inspector.

To rename scenes and change their order:

1. Open boat23.fla in the My Work folder or the Lesson4 folder.
2. Choose **Window > Inspectors > Scene** and then highlight **Scene 1**.
3. Click on the **Properties** button. The **Scene Properties** dialog box opens. Type the new name of the scene, Boat, in the **Name** text box and click on **OK** (see Figure 4-6).
The label on the tab above the layers now reads “Boat” (you might have to move the **Scene Properties** dialog box to see the label).

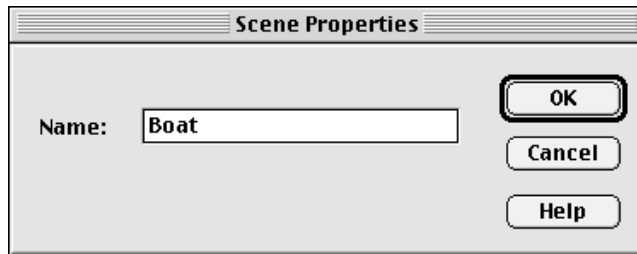


Figure 4-6
Type Boat in the Name text box of Scene Properties.

4. In the **Scene Inspector**, highlight **Scene 2** and click on the **Properties** button. The **Scene Properties** dialog box opens. Type the new name, Beach, in the **Name** text box and click on **OK**.
The label on the tab above the layers reads “Beach.”
5. Place the cursor over **Beach** in the **Scene Inspector**. Hold down the mouse button and drag Beach to the top of the list (see Figure 4-7).
Now **Beach** is the first scene in the movie.

You will add static frames to the Beach Timeline so the image stays on the screen long enough to be seen.

6. Select **Frame 10** of the **Beach** layer. **Right-click** (PC) or **Cmd+click** (Mac) and choose **Insert Frame** (or choose **Frame** from the **Insert** menu).
7. Save the file as **boat24.fla** in the My Work folder. Close the file.

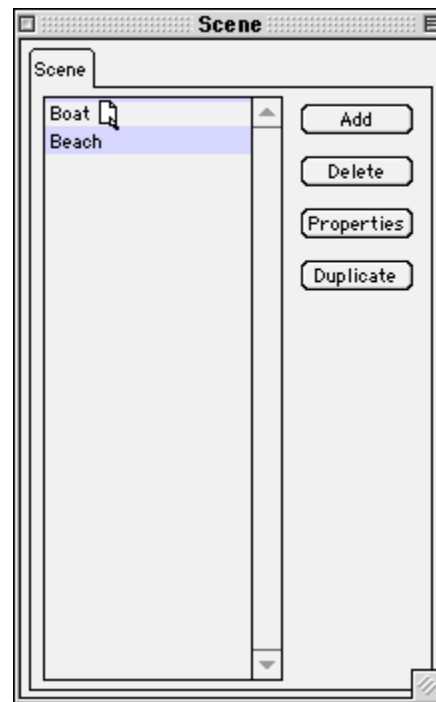


Figure 4-7
Dragging the Beach scene to the top of the list.

ACTIONS

If art and animations are where the fun is in Flash, actions are where the power is. Use actions to make something happen when the movie reaches a certain frame or when the viewer-participant interacts with the movie by pressing a button or typing information into a form.

Flash has provided some simple actions you can set up with a mouse click. In Flash 4, developers have the toolkit they need to create very sophisticated actions. Setting up sophisticated actions requires knowledge of programming and is beyond the scope of these lessons.

In the next exercise you learn to attach an action to a frame so that the action is triggered when the movie reaches that frame. Actions are also often attached to buttons so that rolling the cursor over a button or clicking on a button triggers the action.

Creating a separate layer for actions, like the Actions and Label layer in the exercise below, is a good idea.

In the finished movie, the movie stops playing at the end of the Beach scene. To play the Boat scene, the viewer-participant has to click on the Duckhead button, which will be placed at the end of the Beach scene. Right now, your movie does not stop at the end of the Beach scene, but in this exercise, you will create an action to stop the movie. Later you will set up the Duckhead button so it launches the next scene.

To attach an action to a frame:

1. Open boat24.fla in the My Work folder or the Lesson4 folder.
2. Choose **Control > Play All Scenes**. Then use **Ctrl+Alt+R** (PC) or **Cmd+Opt+R** (Mac) to rewind the movie and press **Enter** (PC) or **Return** (Mac) to play all the scenes in the movie.
The movie plays through, moving from the first scene (Beach) to the second scene (Boat) without pausing.
3. Select the Beach scene from the **Scene** pop-up menu.
Click on the **Add a Layer** icon at the bottom of the **Timeline**. It looks like a plus sign on a page of paper with a corner fold at the bottom right.
4. Double-click on the layer name and rename it Actions and Labels. Select **Frame 10** of the **Actions and Labels** layer. **Right-click** (PC) or **Cmd+click** (Mac) and choose **Insert Keyframe** (or choose **Keyframe** from the **Insert** menu).

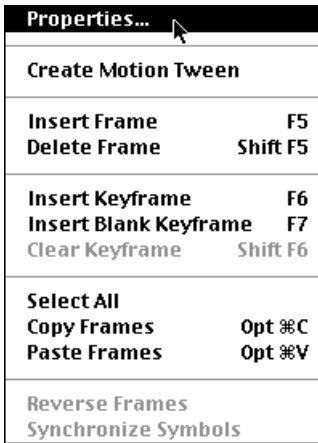


Figure 4-8

From the pop-up menu, choose Properties.

7. Choose **Stop**. In the **Parameter** pane on the right side of the window, **Stop** appears in a highlighted bar with the words “No parameters” beneath it. Click on **OK**.

Note: A parameter is an additional instruction added to the action. For example, in the sentence “Stop three feet in front of the stop sign,” **three feet** and **in front of** are parameters, specifying where to stop. Some Flash actions have parameters; the Stop action does not.

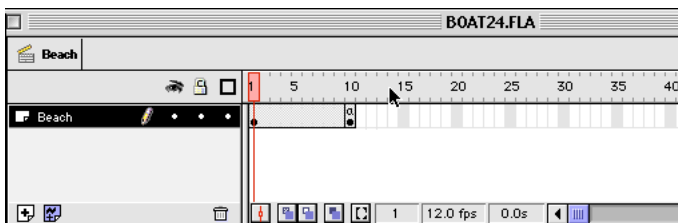


Figure 4-10

The a above the keyframe dot shows that the frame contains an

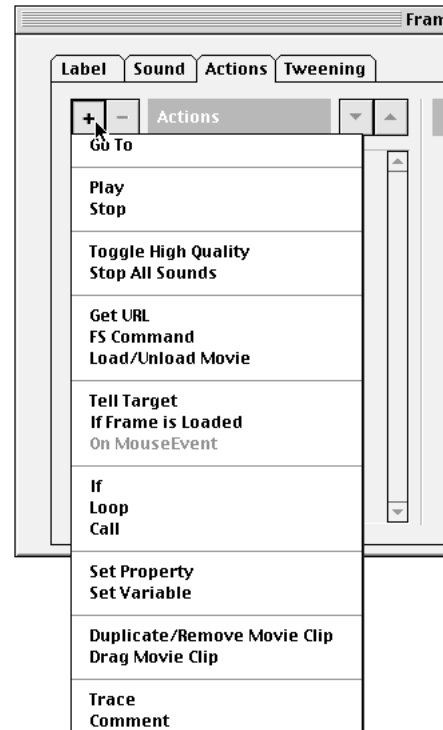
5. Right-click (PC) or **Cmd+click** (Mac) on **Frame 10** (or choose **Modify > Frame**). From the **Frame** pop-up menu, choose **Properties** (see Figure 4-8).

The **Frame Properties** dialog box opens.

6. Choose the **Actions** tab. Click on the **Add (+)** button to add an action.

A pop-up menu opens, with **Action** choices (see Figure 4-9).

Figure 4-9
Click on the Add (+) button to add an action.



Frame 10 has an a above the hollow keyframe circle, indicating that the frame contains an action (see Figure 4-10).

Note: Actions are always inserted in a keyframe.

8. Choose **Control > Enable Frame Actions**. Rewind and play the movie. The movie stops at the end of the Beach scene (Frame 10).
9. Save your file as boat25.fla in the My Work folder. Close the folder.

BUTTONS

Stopping the movie by attaching an action to a frame was easy. Now you want to add navigation to your movie so the user can choose to advance to the next scene. You're ready for buttons. In the following exercise, you will make a button from an existing graphic symbol. Then you will edit the graphic so the button looks different when you move your cursor over it, when you click on the button, and when you release it. Later you will add an action to the button.

First you will make a copy of the Duckhead movie clip symbol and change the behavior of the symbol from movie clip to button.

To make a button:

1. Open boat25.fla in the My Work folder or the Lesson4 folder.
The beach scene is open.
2. Click on the **Add a Layer** icon at the bottom of the **Timeline** on the left.
Double-click on the layer name to rename it **Duck Button**.
3. Select **Frame 1** in the **Duck Button** layer. Choose **Insert > New Symbol**. Name the new symbol **Duck Button** and choose **Button** as its behavior.
The symbol-editing window opens, showing a new **Timeline** with one layer and one keyframe.

The Button Timeline is different from the others you have seen. It has four labels—Up, Over, Down, and Hit—that correspond to the following four button states (see Figure 4-11).

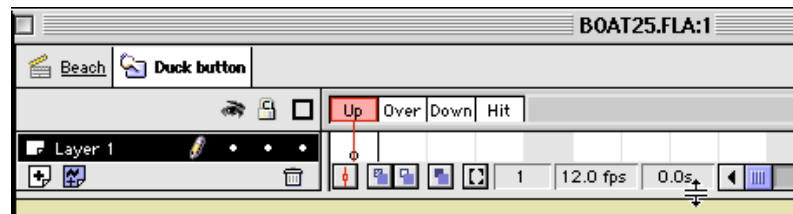


Figure 4-11

The Button Timeline and four labels: Up, Over, Down, and Hit.

- **Up:** The state of the button when it is sitting on the Stage.
- **Over:** The state triggered by rolling over the button with your cursor.
- **Down:** The state triggered when you click on the button.
- **Hit:** Defines the area of the button that is active—in other words, the area you can click on to trigger the action.

First, you need to import and center the duckhead.swf image.

4. Choose **File > Import** and import duckhead.swf from the Lesson4 folder. Choose the **Arrow** tool and draw a marquee to select the graphic.
5. Choose **Window > Inspectors > Object**. Check **Use Center Point** and enter 0 for both the x and y positions.
The graphic is centered on the crosshair in the center of the **Stage**.

Only the first frame in the Button Timeline, labeled Up, has a keyframe. You need to add keyframes to the other frames, and you need to modify the graphic so the button looks different in the various states. You can leave the graphic as it is for the Up state. For Over, you change the color of the graphic in the following steps. Then in the next exercise, you animate the Down state of the button with the Shape Tween movie clip you created in Lesson 3.

First, you need to insert a keyframe in the other three frames.

6. Select the **Over** frame and press **F6** to insert a keyframe.

A black dot appears in the **Over** frame, indicating that it is a keyframe and that it has content (the duckhead graphic).

7. Select the **Down** frame and press **F6** to insert a keyframe. Select the **Hit** frame and press **F6** to insert a keyframe.

Now you have four keyframes, and each one contains the Duck Button graphic.

Remember that the Hit frame is different from the others; it defines the area you can click on to trigger the action. You define the Hit area by drawing a rectangle a little larger than the button on the Stage.

8. Select the **Rectangle** tool with the currently selected fill and draw a rectangle on the **Stage** a little larger than the button graphic.

9. Select the **Over** frame and choose the **Paint Bucket (U)** from the **Drawing** toolbar. Click on the **Fill Modifier** and choose a pale gray blue from the color palette.

The color in the **Fill Modifier** changes to the blue you chose.

10. With the duck graphic selected, choose **Modify > Break Apart**.

The fill is dotted and the lines are striped.

11. Now use the **Paint Bucket** to change the fill to blue.

This graphic is for the **Over** button state; when you move your cursor over the button, you will see the outline of the duck with a blue background (see Figure 4-12).

12. Now you can test your button. First, close the current window by clicking on the **Beach** tab, by pressing **Ctrl+E** (PC) or **Cmd+E** (Mac) or by choosing **Edit > Movie**.



Figure 4-12

The changed button color and outline for the Over state.

Control	Libraries	Window	Help
Play			Return
Rewind			Option ⌘R
Step Forward			>
Step Backward			<
Test Movie			⌘Return
Test Scene			Option ⌘Return
Loop Playback			
Play All Scenes			
Enable Frame Actions			Option ⌘A
✓ Enable Buttons			Option ⌘B
Mute Sounds			Option ⌘M

Figure 4-13

Choose Control > Enable Buttons before you test your button.

13. Choose **Control > Enable Buttons** (see Figure 4-13) and select **Frame 10** from the Beach scene. Move your cursor over the **Duck** button.

The button changes. The button is now an outline of the duck's head with a pale blue background.

14. Choose the **Control** menu again and deselect **Enable Buttons**. Save your file as boat26.fla in the My Work folder. Close the file.

Note: When Enable Buttons is checked, you cannot select and edit a button on the Stage.

CREATING AN ANIMATED BUTTON

Now that you've modified your button, you can use a movie clip symbol to add animation to your button. This is a relatively simple way to add more "splash." In this exercise, you use the Duckhead movie clip symbol you created in Lesson 3 to animate your Duck button in its Down state.

To create an animated button:

1. Open boat26.fla from the My Work folder or the Lesson4 folder.
2. Press **Ctrl+L** (PC) or **Cmd+L** (Mac) to open the **Library** (or choose **Window > Library**).
3. Click on the **Edit Symbols** button at the top right of the **Timeline**. Click on **Duck Button** to edit the **Duck Button** symbol.
The symbol-editing window opens.
4. Select the **Down** frame. Select the duckhead graphic and delete it.
The crosshair for the symbol remains in the center of the **Stage**.
5. Drag the **Duckhead** movie clip from the **Library** to the **Stage** (see Figure 4-14).

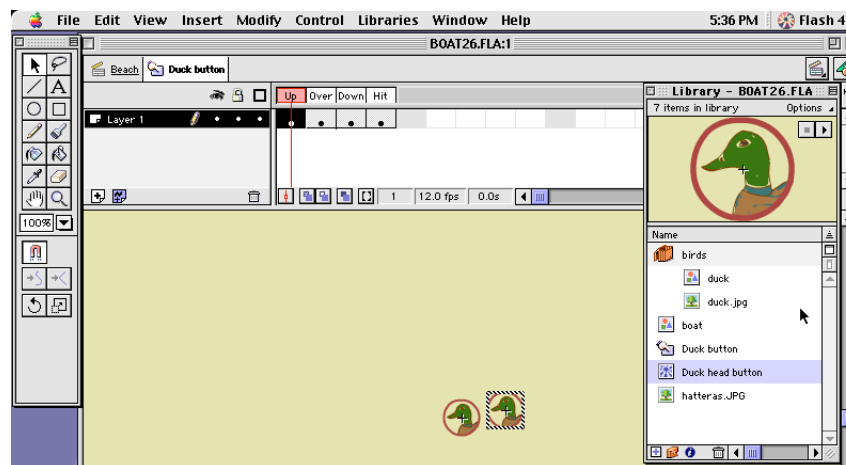


Figure 4-14

Dragging a movie clip from the Library to the Stage.

Note: It's essential that your movie clip be aligned precisely with the Duck Button symbol crosshair so they will align perfectly when the movie plays.

6. To align the two symbols, click on the crosshair of the movie clip graphic. Use the arrow keys on the keyboard to move the image one pixel at a time until the crosshair of the **Duck Button** symbol and the crosshair of the Duckhead movie clip are lined up (see Figure 4-15).

Note: To move 8 pixels at a time, hold the Shift key down while pressing an arrow key in the desired direction.

7. Click on the **Beach** scene tab to close the symbol-editing window and return to the **Stage**.



Figure 4-15

Aligning the crosshairs of the two symbols.

To see how the movie clip works, you must test the movie. Movie clips do not display when you play the movie on the Stage.

8. Press **Ctrl+Enter** (PC) or **Cmd+Return** (Mac) to test the button.

Because you attached a **Stop** action to **Frame 10**, the movie stops at the end of the Beach scene.

9. a. Look at the button before you move the cursor toward it. The duck's head is green and its body is tan. This is the Up state.

b. Roll the cursor over the button. The duck's head and body appear as outlines against a pale blue background. This is the Rollover state.

c. Click on the button and do not release it. The movie clip plays. This is the Down state. The button doesn't work yet because it doesn't have an Action attached to it. You will attach the Action in the next exercise.

d. Release the button and move the mouse away from the button. The button is once more in its Up state with the green and tan duck.

10. Save the file as boat27.fla in the My Work folder.

ADDING A BUTTON ACTION

Of course, the real point of buttons is to add interactivity. In the next exercise, you will use the Go To action to set up the navigation from the last frame in the Loading scene to the first frame in the Intro scene. While the movie is preloading, your viewer might glance away or even walk away. You want viewers to click on the Duck button to start the introduction so you know you have their attention.

To prepare for the action, you will add a label named build to Frame 1 of the Boat scene. Adding a label is a good idea so you can use a label instead of a frame number to specify the frame you want to go to.

Using a frame label is often more reliable because revisions cause frame numbers to change. Because the label is displayed on the Timeline, you can easily troubleshoot a Go To action that goes astray. Many people find labels easier to remember accurately, which helps prevent careless programming errors.

After you create the label, you will set up the action on the Actions tab of the Properties dialog box. Go To is one of a set of actions you can "program" without knowing any code, because Flash has set up menu options to help you build the code step by step.

Flash 4 contains a complete toolkit of actions for developers to use. More sophisticated actions require you to know programming basics.

To add a button action:

1. Open boat27.fla in the My Work folder or the Lesson4 folder.

2. Choose the boat scene from the **Scene** pop-up menu above the **Timeline**.

You are now in the Boat scene, with the Boat **Timeline** displayed.

3. Click the **Add Layer** icon at the base of the **Timeline** to add a layer for your label. Double-click on the layer name and type Actions and Labels as the layer name.

Select **Frame 1** in the **Actions and Labels** layer and **right-click** (PC) or **Cmd+click** (Mac). From the pop-up menu, choose **Properties**.

The **Frame Properties** dialog box opens.

4. Choose the **Label** tab and type begin in the **Name** text box. Choose **Label** as the **Behavior** and then click on **OK** (see Figure 4-16).

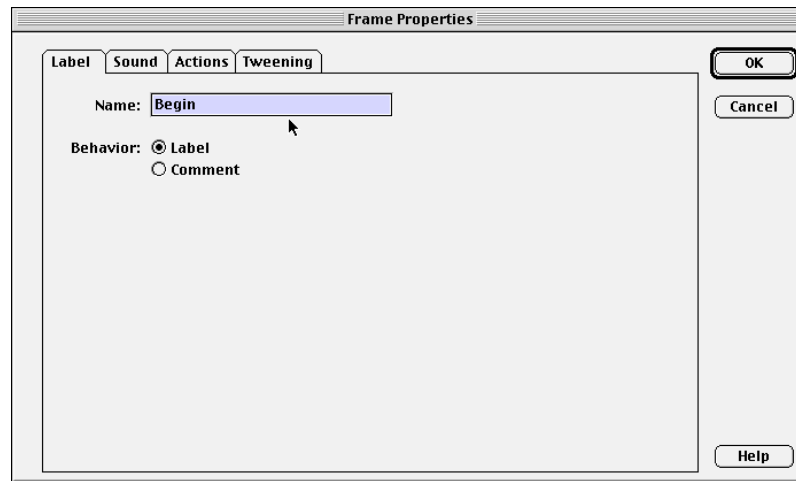


Figure 4-16
The Label tab of the Frame Properties window.

A small red flag appears in Frame 1 and the word “begin” is displayed next to the Frame (see Figure 4-17).

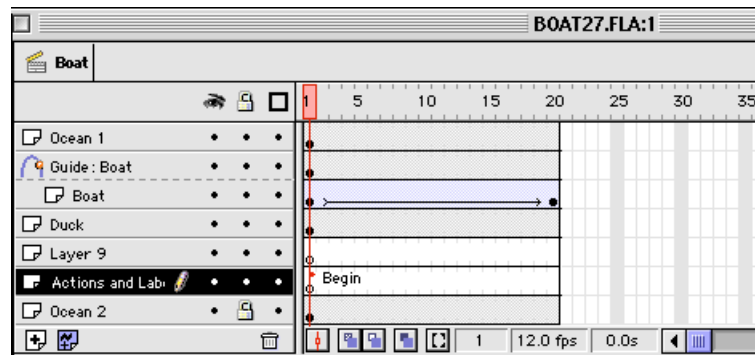


Figure 4-17
The Timeline, showing the label and flag.

5. Click on the **Beach** scene in the scene pop-up to open the Beach Scene **Timeline**. Select **Frame 10**. Click once on the **Duck** button on the **Stage** to select it. **Right-click** (PC) or **Cmd+click** (Mac) on the button and choose **Properties** from the pop-up menu (or choose **Modify > Instance**). The **Instance Properties** dialog box opens.

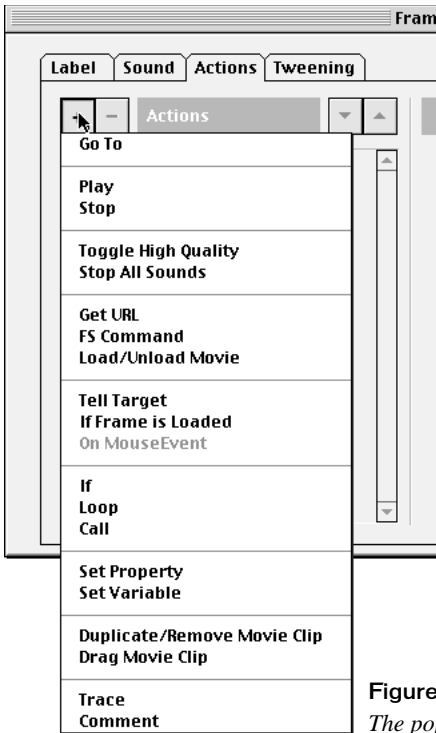


Figure 4-18
The pop-up menu for choosing actions.

6. Choose the **Actions** tab and click on the plus (+) button. From the pop-up menu, choose **Go To** (see Figure 4-18).

Flash inserts three lines of code in the Actions pane and parameters appear in the Parameters pane (see Figure 4-19). The code looks like this:

On (Release): This line of code means “when the button is released.”

Go to and Stop (1): This line of code means “move the current Frame Indicator to Frame 1 and Stop.”

End on: This line of code ends the action.

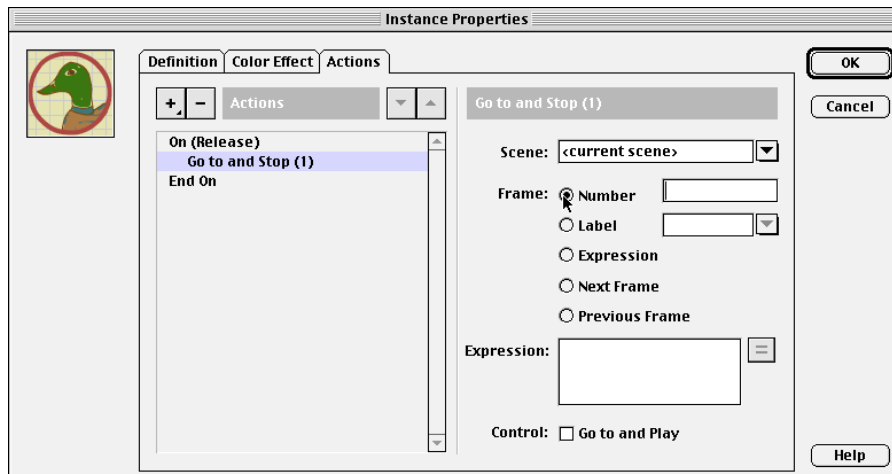


Figure 4-19
The Actions tab of the Instance Properties dialog box, showing three lines of code.

7. Locate **Go to and Stop (1)** at the top of the **Actions** pane. In the Parameters pane, click on the down arrow beside the **Scene** selection box and choose **Boat** as the name of the scene to which you want the movie to go.

In the **Action** pane, the second line of code changes to **Go to and Stop [Boat, 1]**, which means you should go to the Boat scene, frame 1.

8. In the **Frame** area of the **Parameters** pane, choose **Label** and choose **Begin** from the list of labels (it is the only label in this scene).

The code in the **Actions** pane changes to **Go to and Stop [Boat, "Begin"]**, which means you should go to the **Boat** scene, to the frame labeled "begin."

Note: The quotation marks around "begin" tell the program that the word is not a programming command but a string (in this case, a string of letters) that you have entered. A string can also be a series of numbers or a mixture of letters and numbers.

9. At the bottom of the **Parameters** pane, check the box next to **Go To and Play**.

The second line of code changes to **Go To and Play [Boat, "Begin"]** (see Figure 4-20). This is like programming with a friend whispering the correct code in your ear—or even better, because you can't make a spelling error.

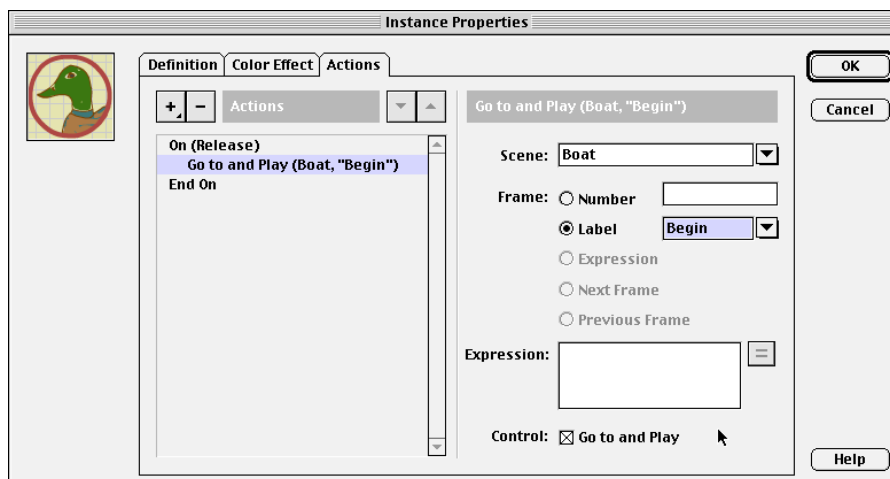


Figure 4-20
The Actions tab after you have made your choices.

10. Click on **OK** to close the dialog box and then press **Ctrl+Enter** (PC) or **Cmd+Return** (Mac).
Your movie plays the Beach scene and stops. When you click on the **Duck** button, the movie navigates to the Boat scene and plays it to the end.
11. Choose **Window > boat27.fla** to return to the Flash file. Save your file as boat28.fla in the My Work folder.

SECTION ASSIGNMENT

- Change the action of the Duck Button instance in Frame 10 of the Beach scene so that you go to the last frame of the Boat scene when you release the button.
- Change the color of the Rollover state of the Duck button.

Note: You must have Control > Enable Buttons turned off before you can select and edit a button.