

# Case Study: Using Macromedia Director



## OBJECTIVES

**Plan the movie**

**Understand Director**

**Get started with Director**

**Set movie properties and use the Tool palette**

**Assemble the cast**

**Play the movie**

**Animate the movie**

**Create scripts in Lingo**

**Add a second animation**

**Create interactivity with buttons**

**Add sound**

**Distribute the movie**

Throughout this book you have been studying multimedia concepts, including the authoring programs used to develop applications. In this unit you will use Macromedia Director, a popular authoring program, to create an interactive movie complete with text, graphics, animation, and sound. In addition, you will learn how to save the movie for distribution on media such as CD/DVD as well as through the Web. The case study in this unit focuses on Multimedia Design Center (MDC), a service provider that creates multimedia applications for clients such as Learning R Us. Learning R Us develops short children's animations that can be viewed and downloaded from its Web site or distributed on CDs. MDC has asked you to create a short opening movie to be part of the FunTimes series.

# Planning the movie



Planning is the first step in developing a Director movie. As you learned earlier, planning includes determining the concept, goals, target audience, treatment, and specifications, as well as creating the storyboard and navigation scheme. In this lesson you will learn how MDC and its client, Learning R Us, approached the planning of this movie.

## DETAILS

- ▶ *The Concept.* Learning R Us distributes a series of children's educational titles on various subjects. Its mission is to provide both educational and entertaining experiences for its audience. The company is creating a new series called FunTimes, which focuses on the user having fun by choosing the "adventure." Although it is transparent to the user, each adventure follows a different educational path.
- ▶ *The Goal.* The goal of the FunTimes series is for the primary audience to have an entertaining experience while encountering educational objectives based on user input. In addition, Learning R Us is hoping that the FunTime series will increase users' awareness of the company and, as a result, increase sales of its educational titles.
- ▶ *The Target Audience.* The primary audience consists of children ages 4–8 who use the computer for entertainment and education. The primary audience may or may not have access to the Web.
- ▶ *The Treatment.* The "look and feel" of the application will focus on simplicity and ease of use with large, cartoon-type graphics. Animation with sound will be used to provide entertainment. The user will use buttons to control the animation.
- ▶ The button selection also will determine which educational adventure is presented—that is, which navigation scheme is followed. An element of surprise will help create excitement.
- ▶ *The Specifications.* The target playback system will account for a strong portion of the installed market: Windows 95 or later, Pentium, Macintosh G3, OS7, 56K modem with Internet Explorer 3.0 (or later) or Netscape 3.0 (or later), sound card; Multimedia elements: Graphics—GIFs and BMPs; Animation—Path animation with GIF graphics; Text—screen headings in Arial font, 18 point, bold, red; button controls for starting and stopping the animation; Audio—WAV files synchronized to the animation.
- ▶ *The Storyboard.* Figure H-1 shows a sketch of the application (movie).
- ▶ *The Navigation.* Figure H-1 also shows the navigation options. Users will be able to click the Plane button to start one animation, the Fun button to start a different animation, the Stop button to stop the animation, and the Next button to continue the title without running the animations. The opening movie gives clues to the educational "adventures." After playing the movie animations, the user can click the Next button to read more about the two possible adventures.

## STEPS ...

### Trouble?

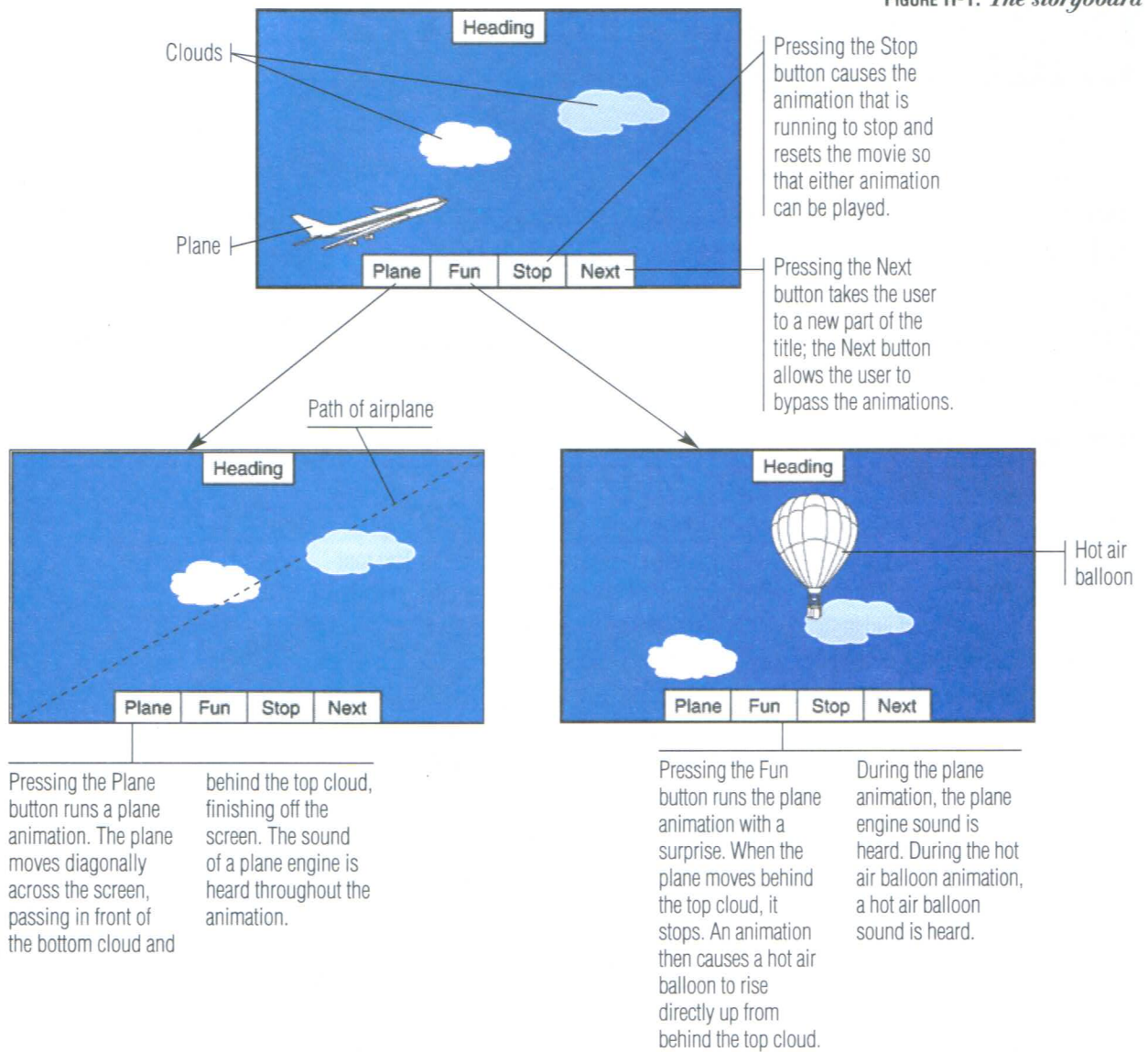
Ask your technical support person or instructor if you need help completing these steps.

### QuickTip

The order of your files may differ.

1. Change your computer settings as follows: Screen resolution—**800 X 600** (Win) or **124 Mhz** (Mac); Colors—**16 bit** (Win) or **Thousands** (Mac); Browser—**Internet Explorer version 5** (or higher) (Win or Mac)  
These are the computer settings used in developing this unit. This unit also uses Internet Explorer version 5. Your screen display may differ somewhat from the figures in this unit if you are not able match these settings.
2. Create a folder on your destination drive named **mymovie[insert your name here]**
3. Navigate to the drive and location where your Project Files are stored and copy the files for this unit to the mymovie[your name] folder: **cloud1.gif, cloud2.gif, hotair.gif, hotair-snd.wav, plane.bmp, plane-snd.wav**

FIGURE H-1: *The storyboard*



## What's new in Director 8.5

*Macromedia Director is an all-inclusive production software application that lets you create and package onscreen movies. With Director 8.5, Macromedia has improved the quality and delivery of rich media applications over the World Wide Web. The term **rich media** includes animation, graphics, 3D modeling, and streaming audio and video events used to enhance a user's experience at a Web site. Listed below are the most important new features in Macromedia Director 8.5.*

- 1) *Integration with RealMedia streaming technologies. RealMedia produces the widely used RealMedia Player, which supports live and preproduced Web-based sound and video events. You can now use this technology in Director 8.5 movies.*
- 2) *Closer integration with Flash 5, a powerful Web multimedia production tool developed by Macromedia.*
- 3) *The ability to build and animate 3D objects and environments, complete with lighting, shading, surface textures, cameras, animation, and tools for simulated real-time navigation.*
- 4) *Improved Director tools, including a context-sensitive Property Inspector, a Cast manager, and context-sensitive Lingo scripts for automating custom multimedia events.*

**For more information, visit the Macromedia site at <http://www.macromedia.com/>, and search for information on Director 8.5.**

# Understanding Director



As you learned earlier, Director uses a movie metaphor that is made up of a series of frames. Cast members (graphics, text, sounds, and so on) are placed on a stage and controlled by a score. The score indicates in which frame(s) of the movie each cast member appears. Figure H-2 shows frame 1 of the completed movie that you will be creating in this unit. Refer to Figure H-2 as you read the following description of the various parts of the Director environment.

## DETAILS

- ▶ **Stage**—The Stage window shows a background (blue color) and the following cast members:
  - Plane Fun from Learning R Us—a heading created using the Director Text tool
  - cloud1—the cloud in the lower-left corner of the stage, a GIF graphic imported into Director
  - cloud2—the cloud in the center of the stage, a GIF graphic imported into Director
  - Plane button—created using the Director Button tool
  - Fun button—created using the Director Button tool
  - Stop button—created using the Director Button tool
  - Next button—created using the Director Button tool (*Note:* This button will branch to another part of the title; it will be placed on the stage as a placeholder in this unit.)
- ▶ **Cast**—The Cast window shows thumbnails of the cast members and their names or cast numbers. Cast members that are imported into Director from a folder such as **mymovie** on the C drive are automatically placed in the Cast window. They can then be dragged from the Cast window to the desired location on the stage. When you drag a cast member to the stage, it becomes a **sprite** is one instance of a cast member. This approach allows you to use the same cast member more than once. For example, to place two planes on the stage, you would drag the plane cast member from the Cast window onto the stage twice; each time a different sprite would be created. You could then change the planes to make them look or behave differently. For example, the plane sprites might move in different directions. Some changes to sprites are made using the Property Inspector window.
- ▶ **Score**—The Score window consists of frames and channels. Each channel is made up of frames, and each channel can have one or more cast members. When cast members are placed on the stage, they are automatically inserted into a channel in the score. You can specify the channel and the frame where a cast member will be inserted. When the movie plays, the playback head starts in frame 1 and moves sequentially to frames 2, 3, 4, and so on. Those cast members that appear in a frame in any channel as the playback head passes over it will be displayed on the stage. To alter the sequential playback of the frames, you can insert scripts into the score or assign scripts to cast members.
- ▶ **Property Inspector** (not shown in Figure H-2)—You use the Property Inspector window to change the properties of a sprite, such as displaying or not displaying the background of a sprite.
- ▶ **Tool palette**—The Tool palette is used to create headings, such as “Plane Fun from Learning R Us.” (It is used for many other tasks as well.) You use the Text tool to create text boxes for headings. You use the Button tool to create buttons for user interaction.
- ▶ Figure H-3 shows the stage displaying frame 2. Notice the following changes from frame 1 to frame 2:
  - The Plane and Fun buttons do not appear on the stage (these buttons appear only in frame 1 of the score).
  - A plane appears on the stage (the plane starts in frame 2 of the score and continues to frame 28 of the score); the plane is a graphic imported into Director.
- ▶ Figure H-4 shows the stage displaying frame 11. In this frame the plane has moved to a position between the clouds. This change in the plane location from frame to frame will create an animation that continues through frame 28.

FIGURE H-2: *Frame 1 of the completed movie*

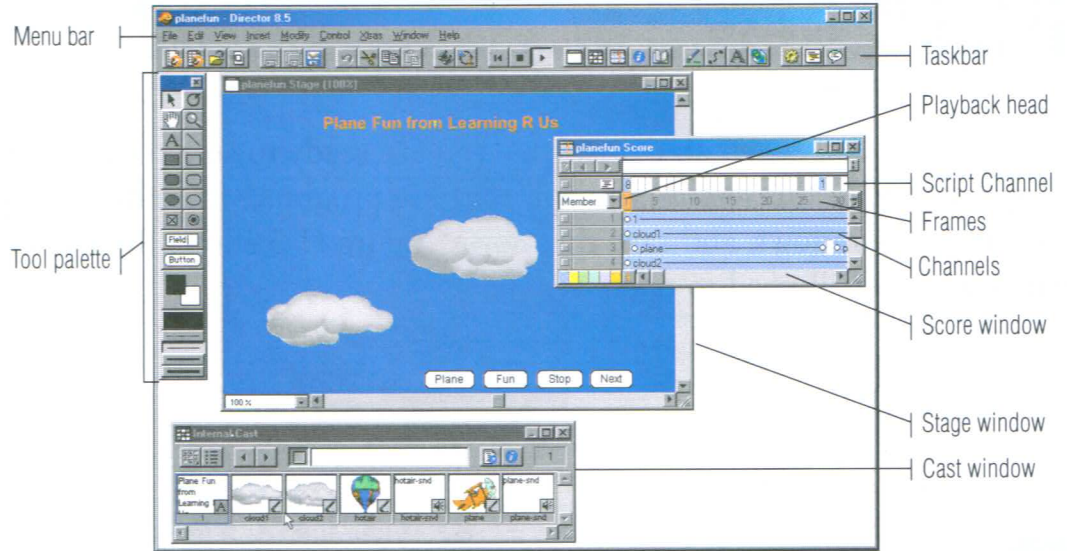


FIGURE H-3: *Frame 2 of the completed movie*

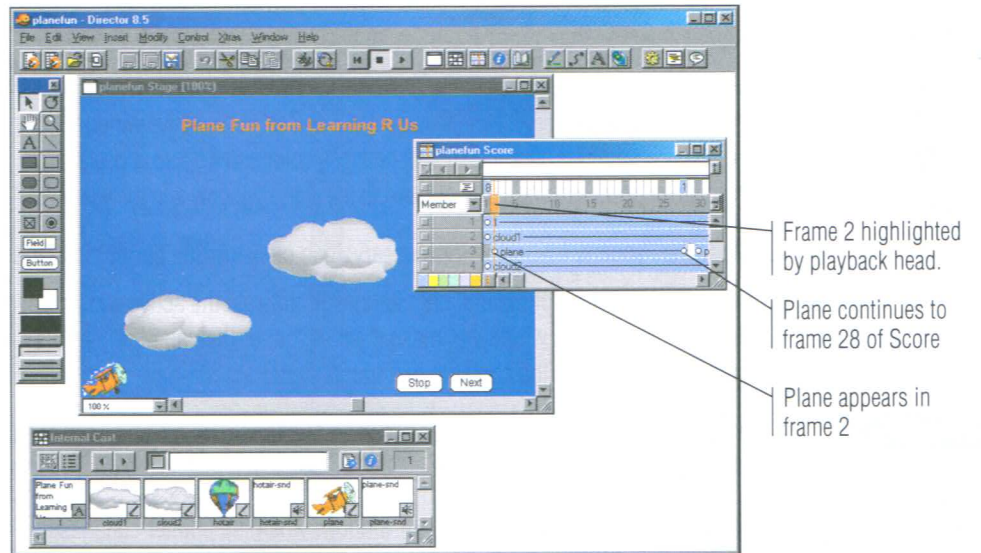
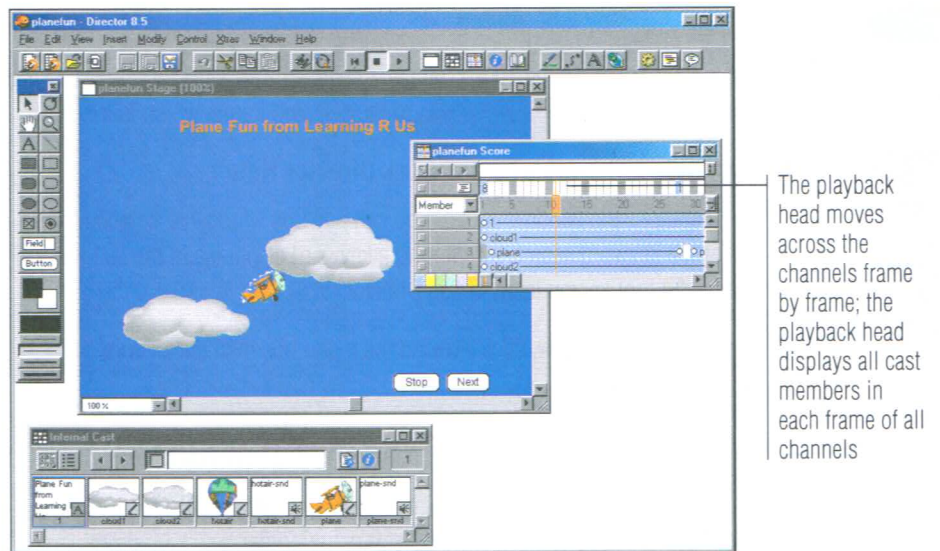


FIGURE H-4: *Frame 11 of the completed movie*



# Getting started with Director



Now that you understand how Director works, you are ready to set up the Director environment for your use. In this lesson, you will start the program, learn how to open and manipulate Director windows, and save the movie. Figure H-5 shows the Director screen and the windows you will need to open.

## QuickTip

If you need help, ask your technical support person for assistance. Your Director environment might differ from that in Figure H-5 depending on the Director properties set at last use.

## QuickTip

You can drag and resize Director windows just as you do windows in other applications.

## QuickTip

You might need to scroll to see the channel.

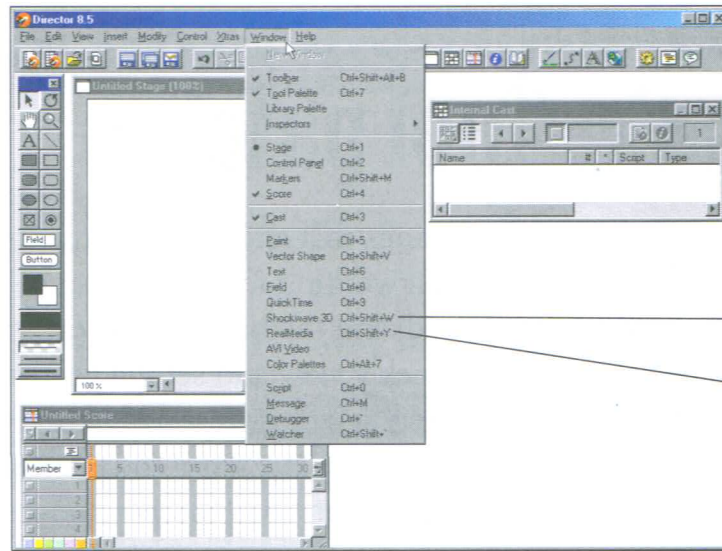
## Trouble?

If you are prompted to download the Java Virtual Machine or to set up a new profile, click Cancel.

## STEPS

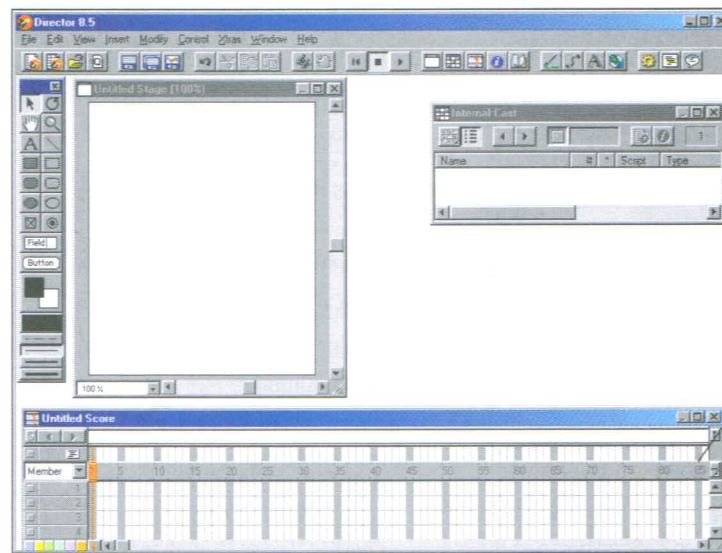
1. Start Director, then click **Window** on the menu bar  
Figure H-5 shows the Window menu, which lists the Window options available.
2. Be sure that **Toolbar**, **Tool Palette**, **Stage**, **Score**, and **Cast** are selected  
A check mark to the left of an option indicates it is selected. Notice in Figure H-5 that Cast is marked with a circle instead of a check mark. The circle indicates that Cast is the active window. In Figure H-5, you know that Cast is the active window because the title bar changes color and a circle appears to the left of Cast in the Window menu. (Macintosh users will see a triangle next to the active window and the window will not be dimmed.)
3. Close the Property Inspector, if necessary, then click the title bar of the Stage window  
Notice that the color of the title bar changes to indicate the active window. Whenever possible you should click the title bar of a window to make it active, rather than another part of that window, so that you do not inadvertently change the contents of a frame.
4. Drag the Stage, Score, and Cast windows to position them, as shown in Figure H-5, then resize the Stage and Cast windows as needed
5. Point to the right border of the Score window; when the pointer changes to  $\leftrightarrow$ , hold down the mouse button, then drag the border to enlarge the score to **85** frames as shown in Figure H-6 (Win) or drag the lower-right corner of the window to enlarge the score to 85 frames (Mac)
6. Click **frame 10 of channel 2** in the Score window to select it  
Figure H-7 shows frame 10 in channel 2 selected. The black rectangle in this frame indicates that the frame is selected. The playback head moves to the selected frame, which is frame 10.
7. Click **Help** on the menu bar, then click **Director Help**  
The Director Help window opens. You can use this window to search for help on Director topics. You can perform a keyword search by entering a keyword or phrase in the text box in the Index tab. The Help window is a useful tool as you learn to use Director.
8. Close the Help window, click **File** on the menu bar, then click **Save**  
The Save Movie dialog box appears.
9. Navigate to the destination drive and folder named **mymovie[your name]**, type **planefun** in the File name text box, then click **Save**  
The movie is saved to the mymovie[your name] folder.

FIGURE H-5: *The Director environment*



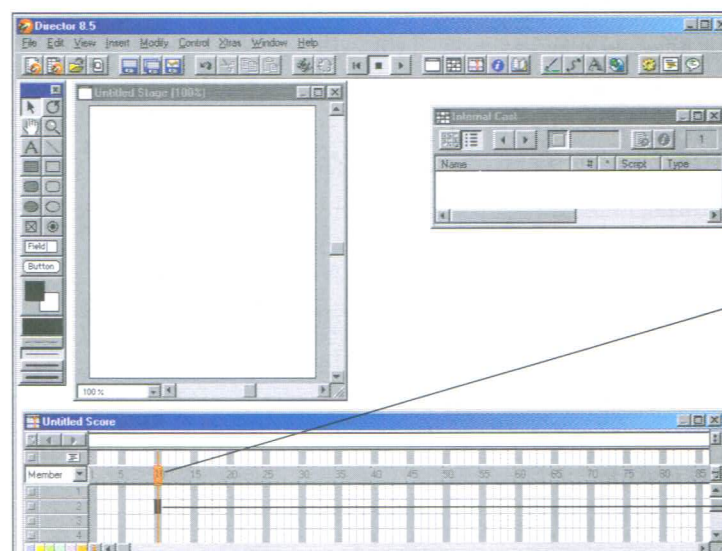
Shockwave 3D Movie menu item  
RealMedia menu item

FIGURE H-6: *Enlarging the Score window*



Number on frame bar indicates frame 85  
Drag the border of the Score window to resize it

FIGURE H-7: *Frame 10 in channel 2 selected*



The playback head moves to the selected frame  
The black rectangle indicates that the frame is selected

# Setting movie properties and using the Tool palette



Director movies have properties—that is, settings that affect the entire movie. For example, you can specify the color palette to be used when working with graphics, the dimensions for the window in which the movie will be displayed, and the background color for the movie. The Property Inspector window allows you to quickly view and set the properties for a movie. The Tool palette provides various tools for creating line drawings, a Text tool for inserting text on the screen, and a Button tool for creating buttons that control the playing of the movie. In this lesson, you will use the Property Inspector to set movie properties and the Tool palette to create the heading text.

## Trouble?

If the Property Inspector window is not completely visible, point to the title bar and drag the Property Inspector window into full view.

## QuickTip

Select the text box and use the handles to resize or move the text box. Double-click the text box to edit the text.

## QuickTip

If you don't have #FF0000 red, click any red box in the palette.

## STEPS


1. Click the Stage window title bar to make it the active window, click **Modify** on the menu bar, point to **Movie**, click **Properties**, then click the **Movie** tab, if necessary  
The Property Inspector window appears as shown in Figure H-8.
2. Verify that **System - Win** (or **Mac**) appears in the system text box, then change the stage size to 500 × 330, if necessary  
The movie is set to play on a Windows system in a 500 × 330 window.
3. Point to the color chip next to the paint bucket, as shown in Figure H-9, then hold down the mouse pointer (Win) or click the color chip (Mac). The Color palette appears. You can use this palette to change the color of a sprite and to select a color for the stage background.
4. Click the blue square (see Figure H-9)  
The Color palette closes and the stage background appears blue.
5. Close the Property Inspector window, then click **frame 1 of channel 1** in the Score window (see Figure H-10)  
You have defined some of the movie properties. Frame 1 in channel 1 is the active frame. Cast members are added to the active frame.
6. Click the **Text tool button**  in the Tool palette, position the pointer in the Stage window, hold the mouse button down, then drag the mouse to create the text box as shown in Figure H-10
7. Release the mouse button, type **Plane Fun from Learning R Us**, drag the pointer across the words to highlight them, click **Modify** on the menu bar, then click **Font**  
The Font dialog box opens. You use this dialog box to identify font properties.
8. Select **Arial**, if necessary, select **Bold**, type **18** in the Size text box, point to the color chip next to Color, hold down the mouse (Win) or click the color chip (Mac), click the color **red** (#FF0000 should appear in the title bar of the color palette) when the color palette appears, click **OK**, then click outside the text box to deselect the text  
The heading appears as red text in a white box at the top of the Stage window. Make the background of the text transparent, and name the text box sprite.
9. Select the text box, click **Modify** on the menu bar, point to **Sprite**, click **Properties**, then in the Property Inspector window click the **Copy list arrow**, click **Background Transparent**, click the **Member tab** , type **heading** in the Name box, then close the Property Inspector
10. Press **Control - S** (Win) or **Command - S** (Mac) to save the movie

FIGURE H-8: *The Property Inspector window*

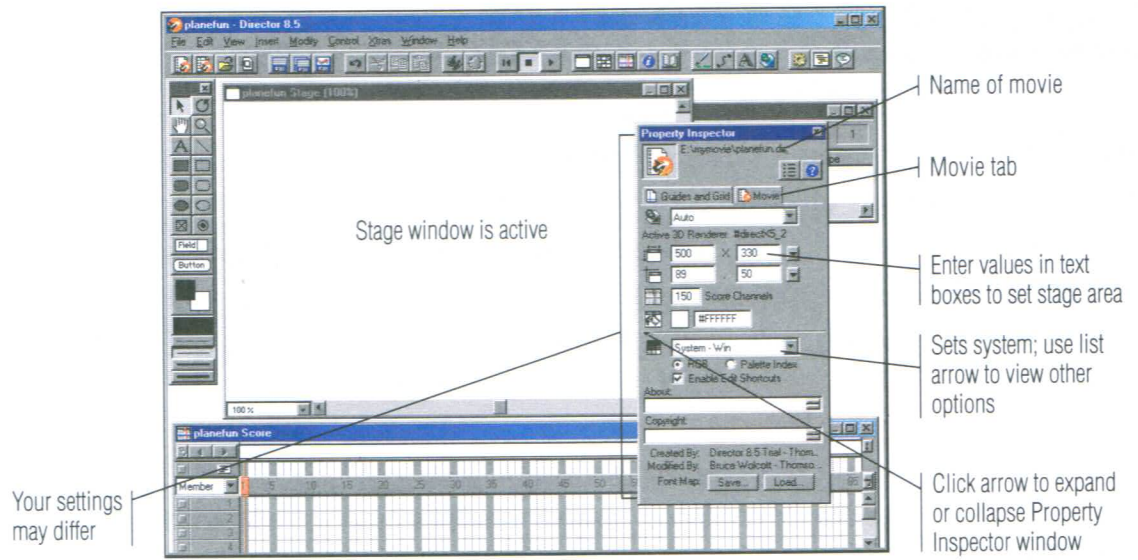


FIGURE H-9: *The Color palette in the Property Inspector window*

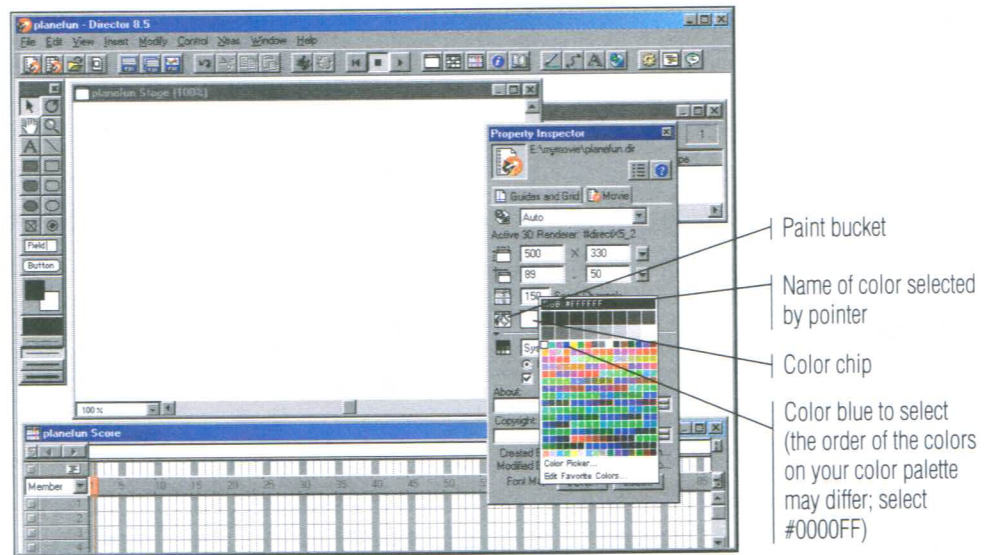
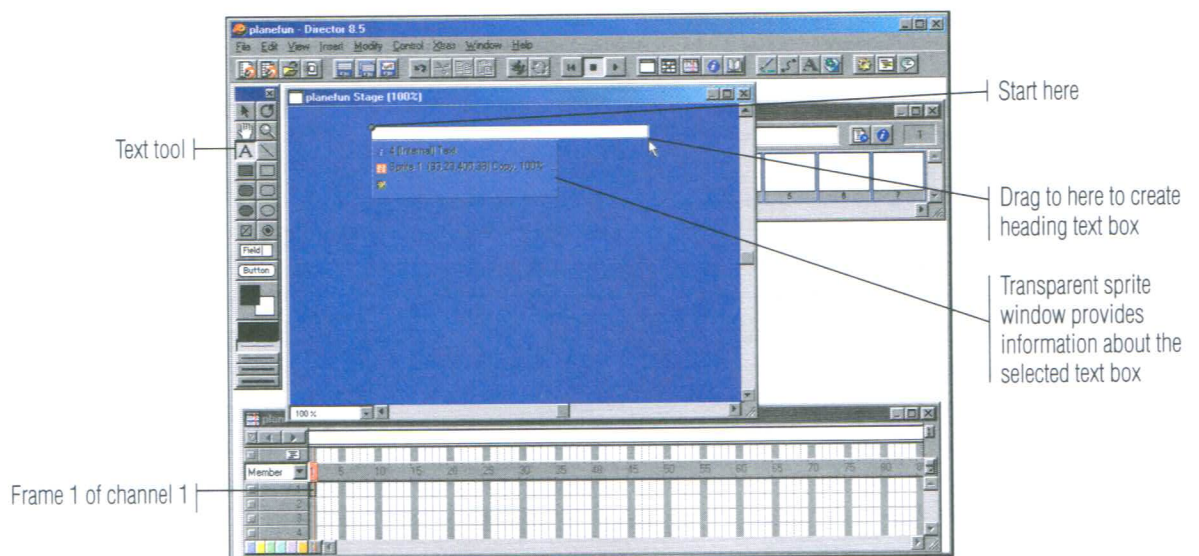


FIGURE H-10: *Creating the heading*



# Assembling the cast



Cast members can be created within Director by using the Tool palette and Paint window, or they can be imported into the Cast window. In the previous lesson you created a cast member when you created the heading. In this lesson you will import four graphic files and two audio files. Once imported, each of these files becomes a cast member. Once the files appear in the Cast window, you can assemble them on the stage as sprites.

## QuickTip

You should add a total of six files to be imported. The order of your files may differ. Your filenames might not include extensions.

## QuickTip

The order of your cast member matches the order in which the files were imported.

## STEPS


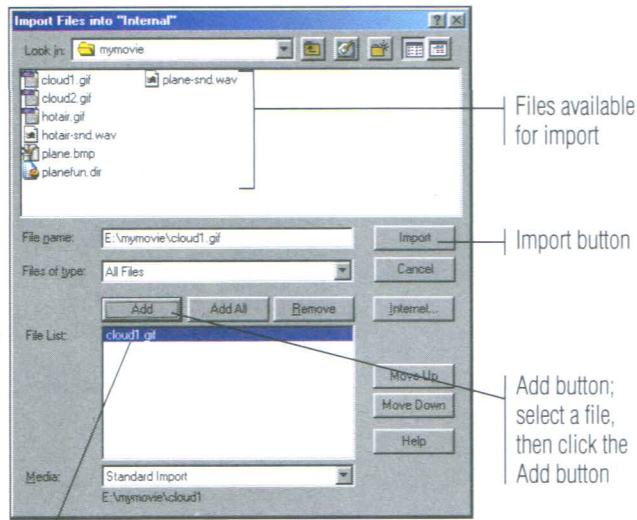
1. Click the **Cast window title bar** to make it active  
Notice that one cast member is present in the Cast window—the heading you created in Lesson 4.
2. Click **File** on the menu bar, click **Import**, use the Look in list arrow to navigate to the **mymovie[your name]** folder if necessary, click **cloud1.gif**, if necessary, then click **Add**  
The Import Files into “Internal” dialog box appears as shown in Figure H-11.
3. Continue to add the files **cloud2.gif**, **hotair.gif**, **hotair-snd.wav**, **plane.bmp**, and **plane-snd.wav**, then click **Import**  
The Select Format dialog box appears.
4. Click **Bitmap Image**, click the **Same Format for Remaining Files** check box, then click **OK**  
The Select Format dialog box closes and the Image Options for ... dialog box appears.
5. Click the **Stage (16 bits)** radio button, click the **Same Settings for Remaining Images** check box, then click **OK**
6. Click the **Cast View Style button** , then resize the Cast window until all cast members are visible  
Figure H-12 shows the Cast window with the cast members. You can use the Cast View Style button to toggle between showing the cast members in list form and showing them as thumbnails.
7. Click the **Score window** to make it active, click **frame 1 in channel 2**, then drag **cloud1** from the Cast window to the Stage window as shown in Figure H-13  
Cloud1 is a sprite on the stage. The blue bar in the Score window indicates that this sprite occupies frames 1 to 28 in channel 2. When you drag a cast member to the stage, Director inserts a sprite into both the selected frame and the next 27 frames. It also allows you to select manually those frames and channels in which sprites appear. Notice that cloud1 has a white background.
8. Be sure the **cloud1 sprite** on the stage is selected (if necessary click cloud1 so 8 handles appear), click **Modify** on the menu bar, point to **Sprite**, click **Properties**, click the **list arrow** in the Property Inspector dialog box next to the word Copy, then click **Background Transparent**  
The background for the cloud1 sprite becomes transparent, which allows the sprite to blend in with the stage background.
9. Click **frame 1 in channel 3**, drag the **plane** to the position on the Stage window shown in Figure H-14, use the Property Inspector dialog box (see Step 8) to make the background transparent, click **frame 1 in channel 4**, drag **cloud2** to the position on the Stage window as shown in Figure H-14, then use the Property Inspector dialog box (see Step 8) to make the background transparent  
The order in which you place cast members on the stage is important. The last cast member placed on the stage will appear on top of the previous ones, because the previous cast members are placed in lower channels. In other words, an object with a higher channel number appears on top of an object with a lower channel number if the two objects appear in the same frame.
10. Save the file

FIGURE H-11: *The Import Files into "Internal" dialog box*



Lists the files to be imported into the Cast window

FIGURE H-12: *The Cast window*

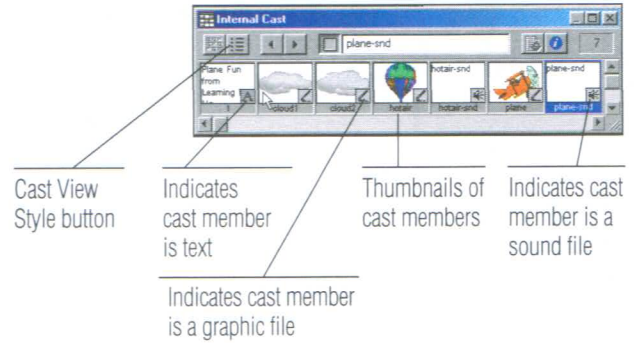


FIGURE H-13: *Placing a cast member on the stage*

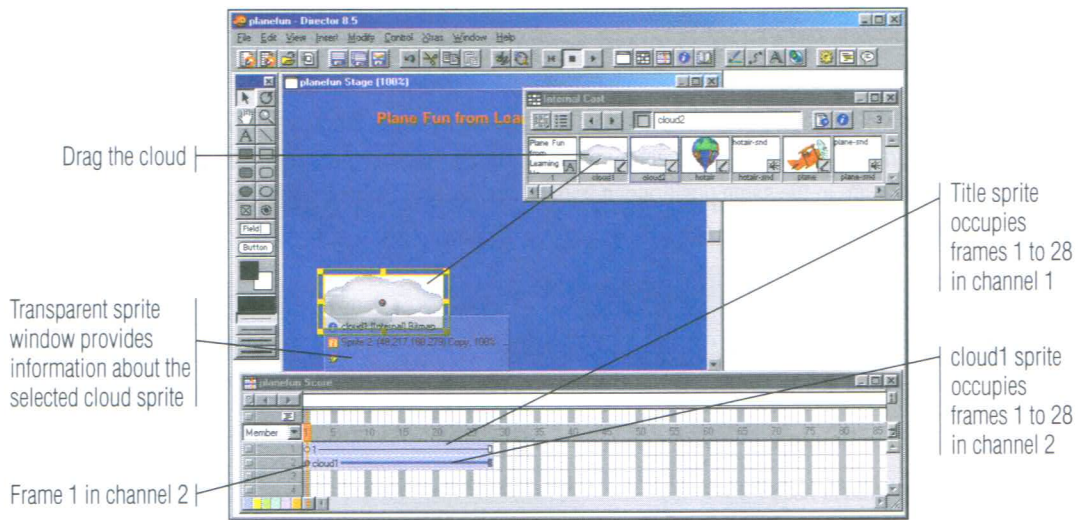
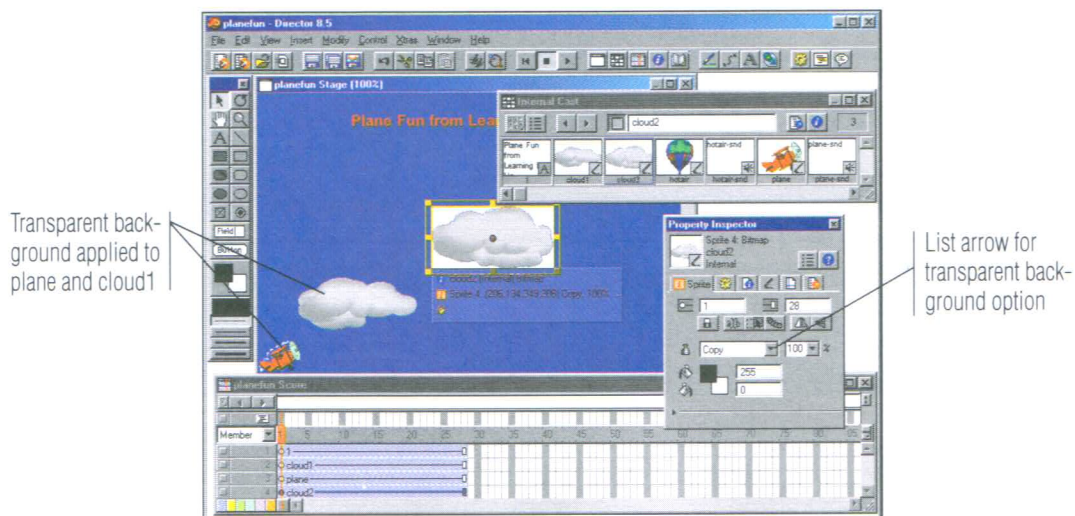


FIGURE H-14: *The plane and cloud cast members placed on the stage*



# Playing the movie



As you create a Director movie, it is important to play it to make sure that the movie is progressing as expected. You should play the movie frequently so that you can make changes as needed along the way rather than having to make lots of changes at the end of the development process. The control buttons appear on the taskbar. You use them to rewind, stop, and play the movie. When you click the Play button, the playback head moves from frame to frame through all of the channels. As the playback head moves, the cast members in the frames and channels over which it passes are displayed on the stage. The movie will continue to loop until you click the Stop button.

## STEPS

1. Close the Property Inspector and Cast windows

You have finished adding the cast members to your stage, so you no longer need the Cast window. If you wanted to add more cast members, you could open the Cast window by using the Window menu.

2. Click the **Play button**  on the taskbar

Figure H-15 shows the movie controls available in Director. While the movie plays, notice that the playback head moves across all channels from frame 1 to 28. None of the cast members moves, however, because all of them are in the same positions in frames 1 to 28. Notice that the playback head continues to loop through frames 1 to 28.

3. Click the **Stop button**  on the taskbar

4. Point to the **circle** next to the word *plane* in frame 1 of channel 3 of the score, hold down the mouse button, then drag the **circle** to frame 2 as shown in Figure H-16

5. Click the **Rewind button**  on the taskbar

The playback head moves back to frame 1, but the plane does not appear on the stage. Because the playback head is positioned over frame 1, only the cast members in frame 1 appear on the stage. Because the plane is found in frame 2, it will not appear on the stage until the playback head reaches frame 2. You can manually move the playback head frame by frame to see the changes on the stage.

6. Point to the **playback head**, drag it to **frame 2**, then drag it to **frame 1**

7. Click , watch the movie loop a few times, then click 

8. Save the movie

### Trouble?

If the playback head does not continue to loop, click Control on the menu bar, then click Loop Playback.

### Trouble?

The Stop button on the taskbar must be selected.

FIGURE H-15: *The movie controls in Director*

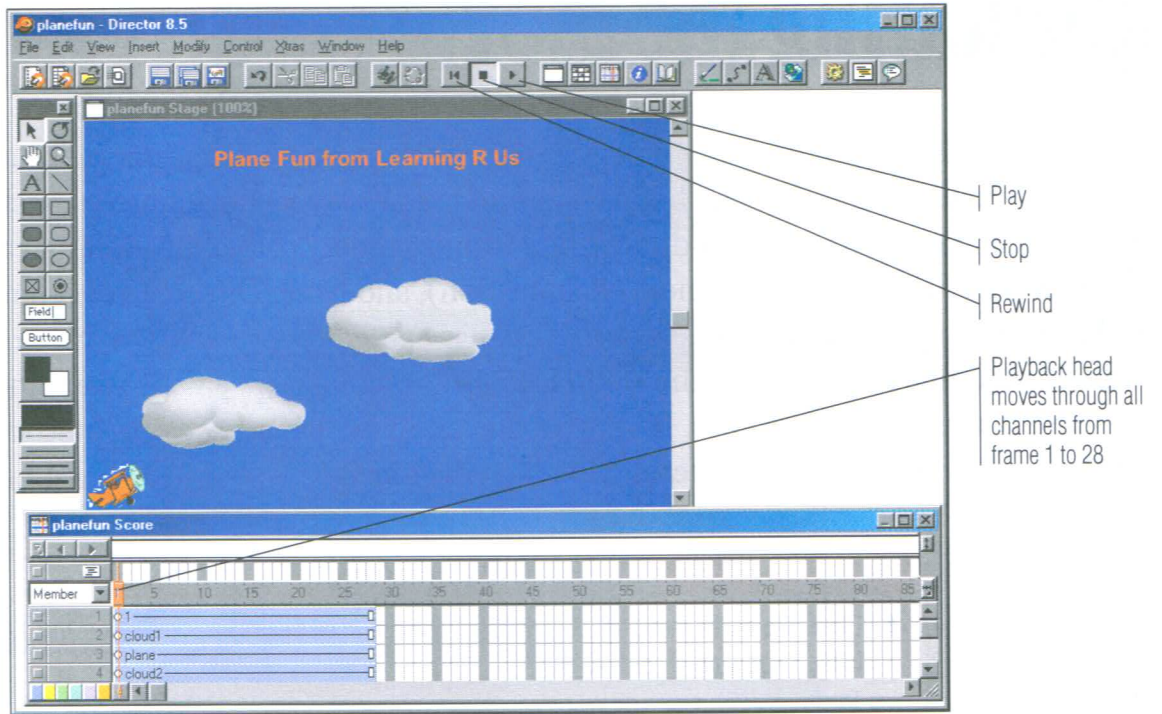
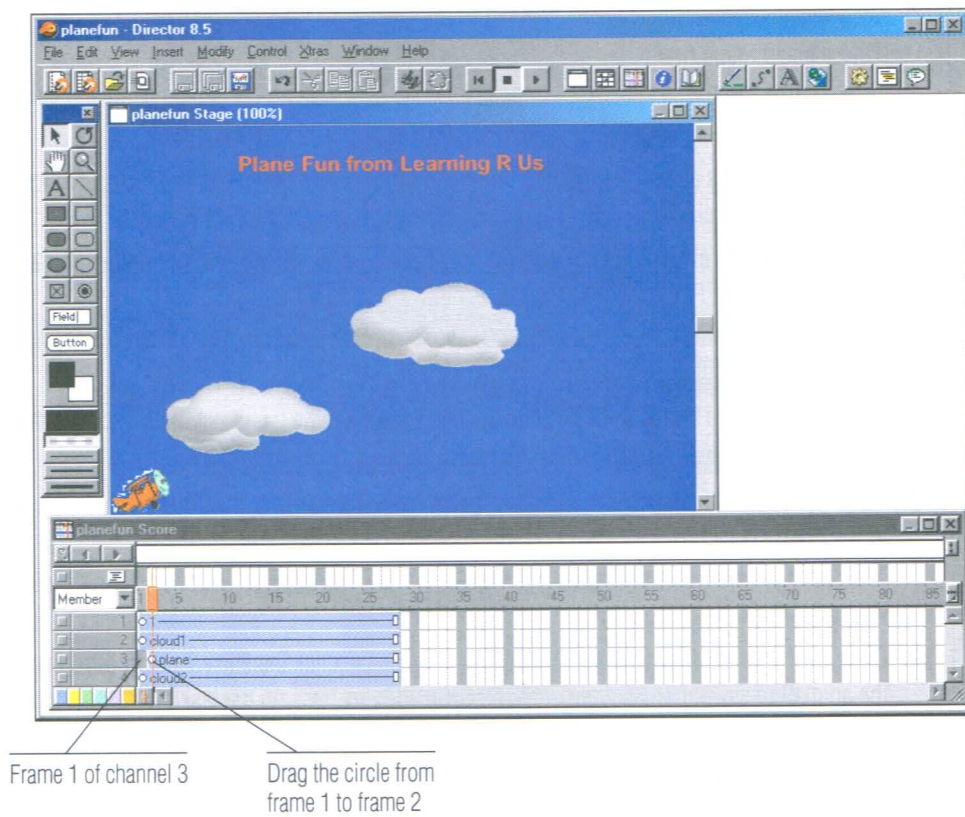


FIGURE H-16: *Adjusting the score by moving the plane sprite out of frame 1*






# Animating the movie



To create animation in a movie, you change a sprite's position or appearance from one frame to another. Several techniques can be used to create an animation, including dragging a sprite around the stage and recording its movement (path animation), creating a series of sprites that display one at a time (cell animation), and using Director's tweening function. In **tweening**, you specify **keyframes** in the score that mark the positions of sprites on the stage. Director determines the path of the sprite from one keyframe (position) to another and fills in the score between the keyframes. In this lesson you will use the tweening function to create an animation that moves the plane across the stage diagonally.

## STEPS

1. Click **File** on the menu bar, point to **Preferences**, click **Sprite**, then make sure that a check mark appears in the **Tweening** check box  
The Sprite Preferences dialog box appears as shown in Figure H-17. The Tweening check box turns the Tweening feature on or off.
2. Click **OK**  
The Sprite Preferences dialog box closes.
3. Click the **circle** in frame 2 of channel 3 (the plane channel) in the score, then click **Insert** on the menu bar  
The insert menu appears as shown in Figure H-18.
4. Click **Keyframe**  
The selected frame (frame 2 in channel 3) is set as a keyframe. A **keyframe** is a frame that indicates to Director that a sprite is changing a property, such as moving on the screen in an animation.
5. Click the **plane** on the stage  
The sprite handles appear on the plane frame to indicate that the plane is selected. Notice the blue circle in the middle of the plane.
6. Point to the **blue circle** in the middle of the plane, hold down the mouse button, drag **the plane** off the stage as shown in Figure H-19, then release the mouse button  
When you use the blue circle to drag the plane to another location, Director creates an animation path as indicated by the dotted yellow line.
7. Click the **circle** in frame 28 of channel 3, click **Insert** on the menu bar, then click **Keyframe**  
Frame 28 in channel 3 is set as a keyframe.
8. Click **Modify** on the menu bar, point to **Sprite**, click **Tweening**, then make sure that a check mark appears in the **Path** check box  
The Sprite Tweening dialog box appears as shown in Figure H-20. It allows you to specify which changes to the sprite you would like to track.
9. Click **OK**, click the **Rewind** button  on the taskbar, click the **Play button**  on the taskbar, watch the animation several times, then click the **Stop button**  on the taskbar  
Notice that the plane goes behind cloud2, which is the cloud in the middle of the stage, because cloud2 is placed in channel 4, and the plane is placed in channel 3. The plane appears to go behind the cloud because it is placed in a lower channel than the cloud.
10. Save the movie

### QuickTip

To reposition a sprite, point to the object and drag it to a new location. To resize a sprite, drag one of its handles.

### QuickTip

When the pointer is positioned correctly over the circle, it is black; if it is incorrectly positioned, it is white.

FIGURE H-17: *The Sprite Preferences dialog box*

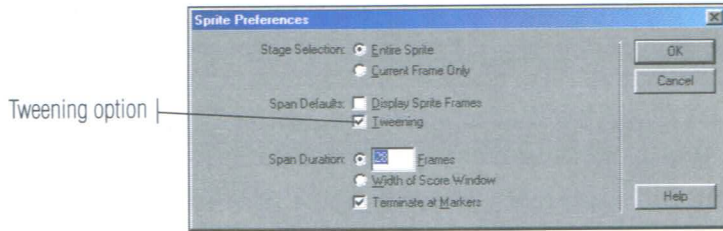


FIGURE H-18: *Setting a keyframe*



FIGURE H-19: *Creating a path for the animation*

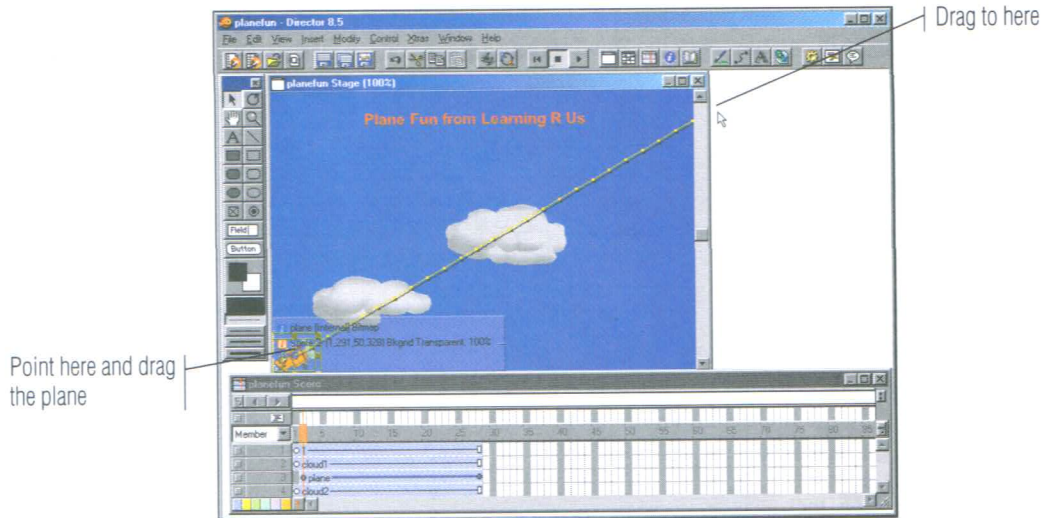
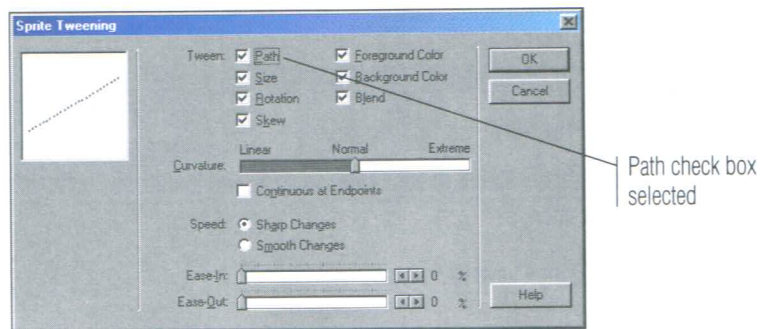


FIGURE H-20: *The Sprite Tweening dialog box*



# Creating scripts in Lingo



The controls you have been using to play the movie appear on the menu bar of the Director program. These controls, however, are not available to the user. Without user control, the movie would play automatically and would loop indefinitely. A **script** instructs Director to carry out a particular function. You can assign scripts to both frames and sprites. **Lingo** is the name of Director's scripting language. If a script is assigned to a frame, when the playback head reaches the assigned frame, the script executes. For example, to prevent the movie from playing automatically, you can have the playback head pause at frame 1 by creating a script for frame 1. In this lesson you will develop scripts that create user controls for playing movies.

## STEPS

1. Double-click **frame 1** in the script channel as shown in Figure H-21, then type **go to the frame** on line 2 in the Behavior Script dialog box

Figure H-21 shows the completed script in the Behavior Script dialog box. The number in the dialog box refers to the cast number assigned to the script. (Your number may differ.) When you open a script dialog box from the script channel, Director assumes that you will be creating an on exitFrame script because it is such a common script. Consequently, Director displays the beginning and ending parts of the script. You can change these lines to create a different script, if desired.

2. Close the dialog box, click the **Rewind button**  on the taskbar, then click the **Play button**  on the taskbar

Notice that the playback head does not move past frame 1.

3. Click the **Stop button**  on the taskbar

4. Click **Button**  on the Tool palette, draw a button on the stage as shown in Figure H-22, then type **Plane**

5. Click the **Plane button** on the stage to select it, click **Modify** on the menu bar, point to **Sprite**, then click **Script**

The Behavior Script dialog box appears and includes the *on mouseUp* command. The on mouseUp script will be assigned to the button, so when the user clicks the button, the next line of the script will execute.

6. Type **go to frame 2** on line 2 in the Behavior Script dialog box, then close the dialog box

7. Click , then click 

The movie begins to play but pauses at frame 1, as dictated by the script in the frame 1 script channel.

8. Click the **Plane button** on the stage

The movie plays and pauses again at frame 1.

9. Click the **Plane button** on the stage

The movie plays again. In a later lesson you will learn how to create interactivity so that the movie will play more than once.

10. Click , then save the movie

### QuickTip

When working in Director, you must use the movie control buttons on the taskbar to rewind and start the movie before you use buttons on the stage.

FIGURE H-21: Inserting a script in frame 1 of the script channel

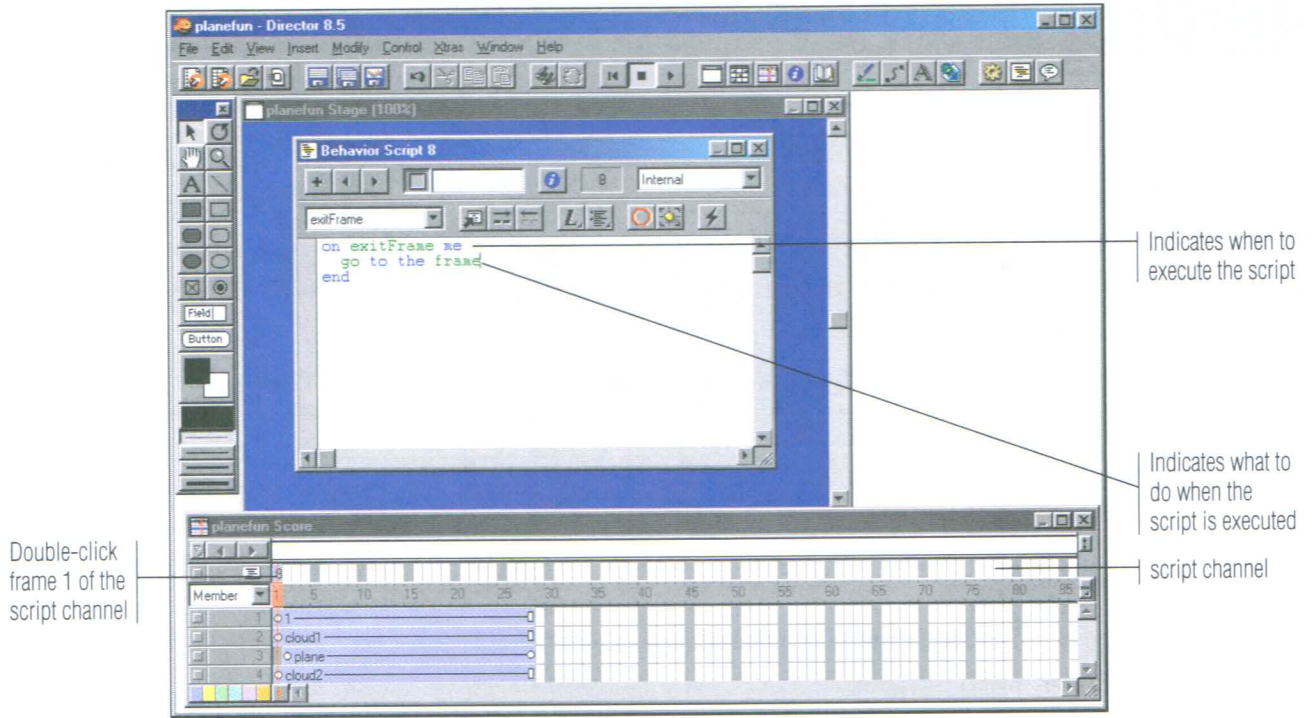
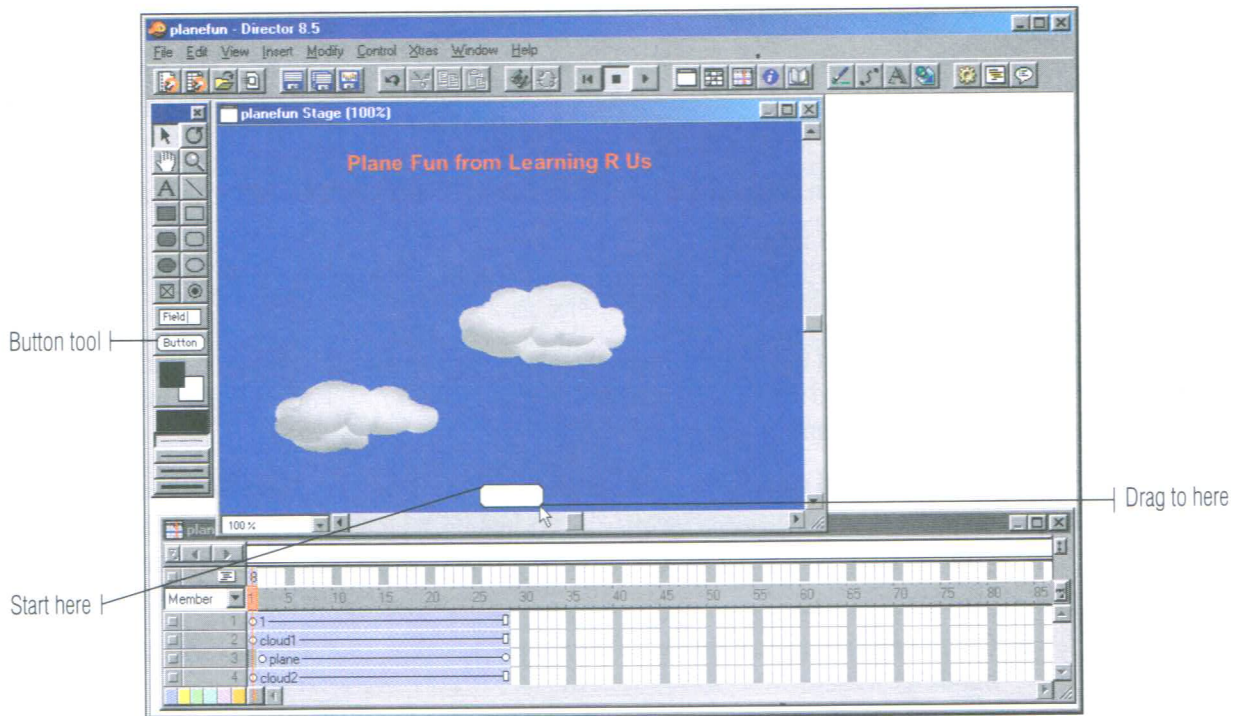


FIGURE H-22: Creating a button






# Adding a second animation



Currently, the movie is linear. That is, once it begins to play, each frame is played sequentially—frame 1, frame 2, frame 3, and so on. In this lesson, you will create a second animation. You will then set up the score so that the user can jump to a different part of the movie and play frames out of sequence. The second animation will be placed in the same channel as the plane, but in different frames. You will need to change the score so that the other sprites (the heading and the clouds) appear in more frames.

## STEPS

1. Click **Window** on the menu bar, click **Cast**, click **Modify** on the menu bar, point to **Movie**, then click **Properties**  
The Cast window and the Property Inspector dialog box appear.
2. Point to the **rectangle** in frame 28 of channel 1 (the heading), drag it to **frame 85** as shown in Figure H-23, then repeat this action for channel 2 (cloud1) and channel 4 (cloud2)  
The sprites in channels 1, 2, and 4 will appear in the movie from frame 1 to frame 85.
3. Click **frame 30 in channel 3** of the Score, drag the **plane** from the Cast window to the lower-left corner of the stage as shown in Figure H-24, click the **plane** to select it, then use the Property Inspector dialog box to make the background transparent
4. Click **Insert** on the menu bar, click **Keyframe**, click **frame 57 in channel 3**, click **Insert** on the menu bar, then click **Keyframe**
5. Point to the **small circle** on the plane, hold down the mouse button, drag **the plane** behind the top cloud so that it disappears, click **Modify** on the menu bar, point to **Sprite**, click **Tweening**, be sure that **Path** is checked, then click **OK**
6. Click **frame 58 in channel 3** of the score, then drag the **hot air balloon** from the Cast window to the center of the top cloud  
The balloon will not be visible because it is located in the channel before cloud2. Nevertheless, you can still see the frame and the sizing handles of the balloon.
7. Click a **handle of the hot air balloon**, use the Property Inspector to make the background transparent, click **Insert** on the menu bar, click **Keyframe**, click **frame 85 in channel 3**, click **Insert** on the menu bar, then click **Keyframe**
8. Point to the **small circle** on the hot air balloon, hold down the mouse button, drag **the circle** straight up and off the screen as shown in Figure H-25, click **Modify** on the menu bar, point to **Sprite**, click **Tweening**, be sure that **Path** is checked, move the **Ease-Out** slider to the right to 100% (to slow the balloon as it leaves the stage), then click **OK**
9. Close the Cast window, close the Property Inspector dialog box, click , click , then click the **Plane button** on the stage  
The movie plays both animations: the plane moving diagonally across the stage and the plane hiding behind cloud 2 as a hot air balloon emerges from behind the cloud.
10. Click , then save the movie

### Trouble?

Drag the Cast window/Property Inspector dialog box out of the way.

### Trouble?

Resize the Cast window if necessary to see all cast members

### Trouble?

The transparent sprite window might make it difficult to see the circle.

### Trouble?

If you have difficulty selecting the hot air balloon, move the cloud, select the balloon, complete Step 8, then move the cloud back into position.

FIGURE H-23: Changing the score to have the heading appear in more frames

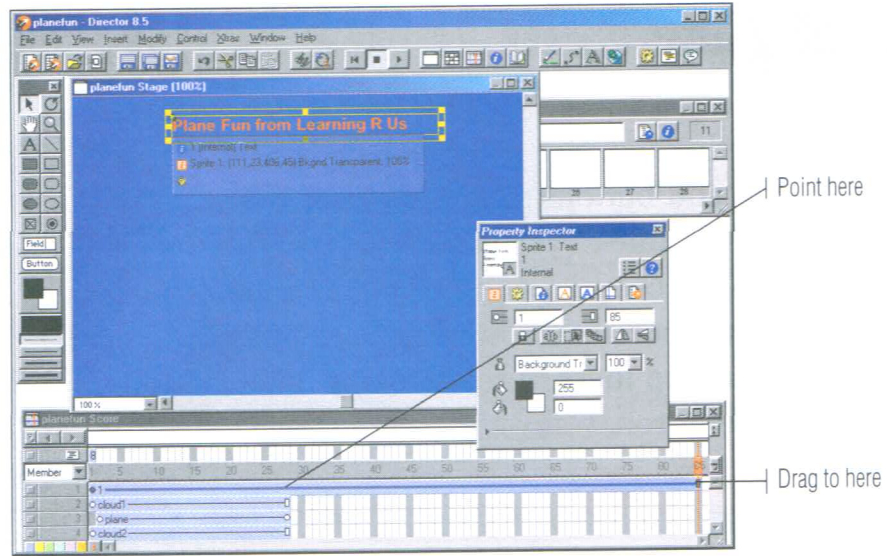


FIGURE H-24: Positioning the plane for the second animation

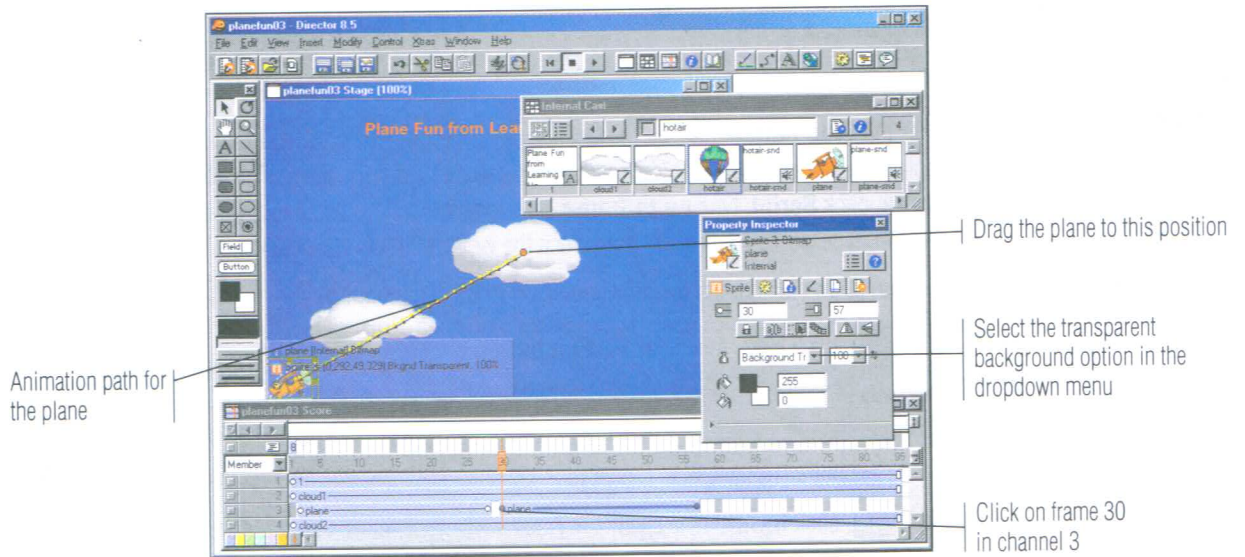
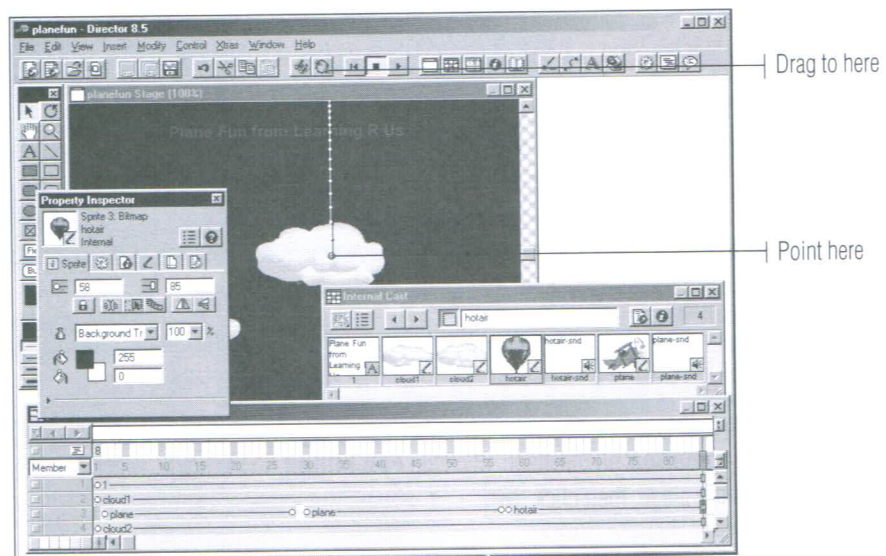


FIGURE H-25: Creating the path for the hot air balloon















# Creating interactivity with buttons



Your movie is almost finished, but a few more enhancements will make it even better. For example, you want to add buttons to give the user control over the animations and the title. The user should be able to click one button to run the plane animation only and a second button to run the combined plane/hot air balloon animation. The user should also be able to stop an animation that is running so as to make a different selection. Finally, the user should be able to skip these introductory animations and move to the next part of the application. In this lesson, you will create interactivity by adding buttons and scripts.

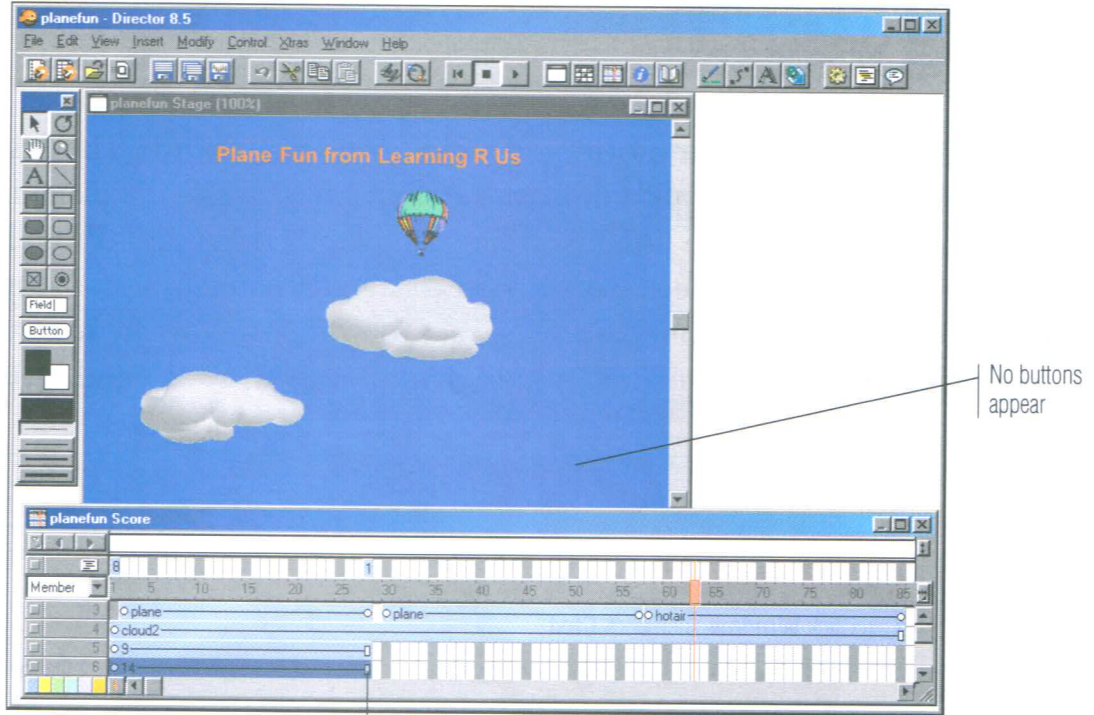
## STEPS

1. Double-click **frame 28** of the script channel, type **go to frame 2**, then close the Script window
2. Click the **Rewind button**  on the taskbar, click the **Play button**  on the taskbar, then click the **Plane button** on the stage  
Now only the first animation plays.
3. Click the **Stop button**  on the taskbar, click **frame 1 of channel 6**, click **Button**  on the Tool palette, draw a button to the right of the Plane button, type **Fun**, click **Modify** on the menu bar, point to **Sprite**, click **Script**, type **go to frame 30**, close the dialog box, double-click **frame 85** of the script channel, type **go to frame 30**, then close the window  
The Fun button is scripted to show frames 30 to 85 continuously.
4. Click , click , then click the **Fun button** on the stage  
Now only the second animation, which shows the plane flying into the cloud and then the hot air balloon rising out of the cloud, plays. Notice that the Plane button and the Fun button no longer appear on the stage, as shown in Figure H-26, because the scores for these buttons stop at frame 28 and the script starts at frame 30.
5. Click , click **frame 1 of channel 7**, click , draw a button next to the Fun button, type **Stop**, click **Modify** on the menu bar, point to **Sprite**, click **Script**, type **go to frame 1**, close the dialog box, then drag the **rectangle** in frame 28 of channel 7 to **frame 85**  
Figure H-27 shows the Stop button and the adjusted score. The score for the Stop sprite extends to frame 85 so that the Stop button appears throughout the movie, regardless of which animation is playing.
6. Click **frame 1 of channel 8**, click , draw a button next to the Stop button, type **Next**, point to the **rectangle** in frame 28 of channel 8, then drag the rectangle to **frame 85**  
This button will be left inactive for this tutorial.
7. Point to the **rectangle** in frame 28 of channel 5, drag the rectangle to **frame 1**, point to the **rectangle** in frame 28 of channel 6, then drag the rectangle to **frame 1**  
The Plane button and the Fun button will appear only when frame 1 of the movie is played. The Stop button and the Next button will still appear as the entire movie is played.
8. Click , click , click the **Plane button** on the stage, watch the animation several times, click the **Stop button** on the stage, click the **Fun button** on the stage, watch the animation, click the **Stop button** on the stage, then click 
9. Save the movie

### QuickTip

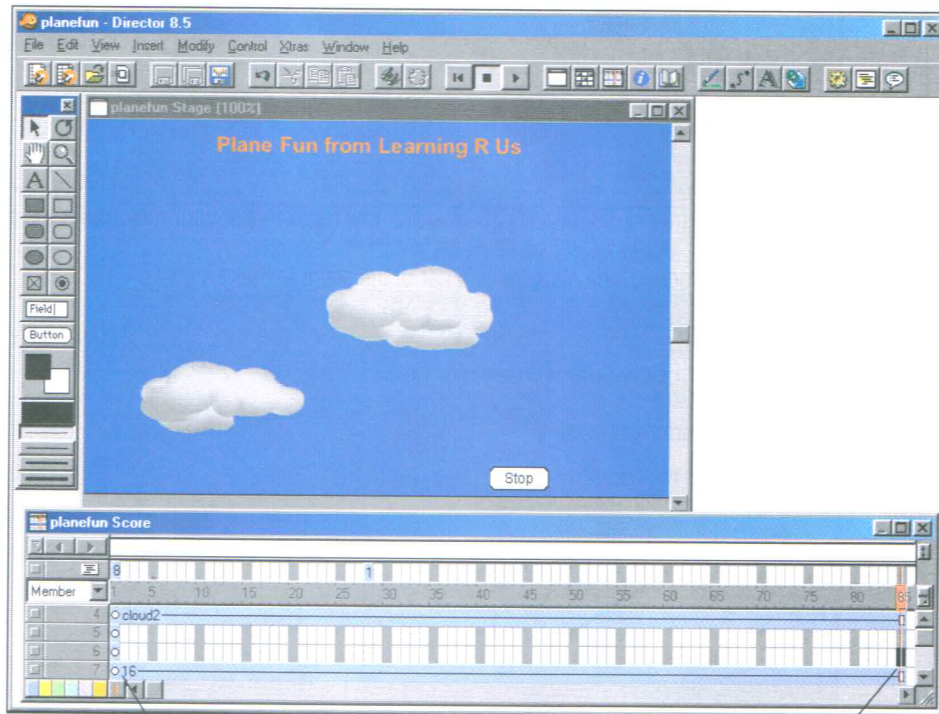
You may need to move the Score window and the scroll bars to access channels.

FIGURE H-26: No buttons appear while second animation runs



Buttons end at frame 28 in the score and the movie is playing frames 30 – 85

FIGURE H-27: Score adjusted so Stop button appears on the screen from frame 1 to 85



Your numbers may differ

Score for Stop button sprite extended to frame 85

# Adding sound



To add more excitement to your movie, you will include two sounds. The first sound, which is the plane-snd file, will play in frames 2 through 57 while the plane is animated. The second sound, which is the hotair-snd file, will play in frames 58 through 85 while the hot air balloon is animated. Director provides two sound channels in the score. To add sound to a movie, you drag a sound cast member to the starting frame in a sound channel and then extend the score as needed. In this lesson, you will add sound cast members to your movie.

## STEPS

1. Click **Window**, then click **Cast**

The Cast window appears. You will add files to the Cast window so that it resembles the Cast window shown in Figure H-28.

2. Click the **Hide/Show Effects Channels** button  on the Score window as shown in Figure H-29

The effects channels appear in the Score window. You can use them to insert scripts and sounds, change the playback speed of the movie, and specify palettes and transitions.

3. Drag the **plane-snd** sound file from the Cast window to frame 2 of sound channel 1 as shown in Figure H-30


4. Drag the **rectangle** in frame 29 of sound channel 1 to frame 57

The airplane sound has been added to sound channel 1. This sound will be heard each time the playback head passes over frames 2 through 57.

5. Drag the **hotair-snd** sound file from the Cast window to frame 58 of sound channel 1

The hotair-snd sound has been added to sound channel 1. This sound will be heard each time the playback head passes over frames 58 through 85. You are now ready to test your movie with the sounds.

6. Close the Cast window, then click the title bar of the stage to make it active

7. Click **Rewind**  on the taskbar, click **Play**  on the taskbar, click each button on the stage to test it, then click the **Stop** button on the stage to end each animation

8. Click **Stop**  on the taskbar

9. Save the movie

### QuickTip

You may need to scroll left to see the sound file.

### QuickTip

Do not test the Next button. It has not been assigned an action.

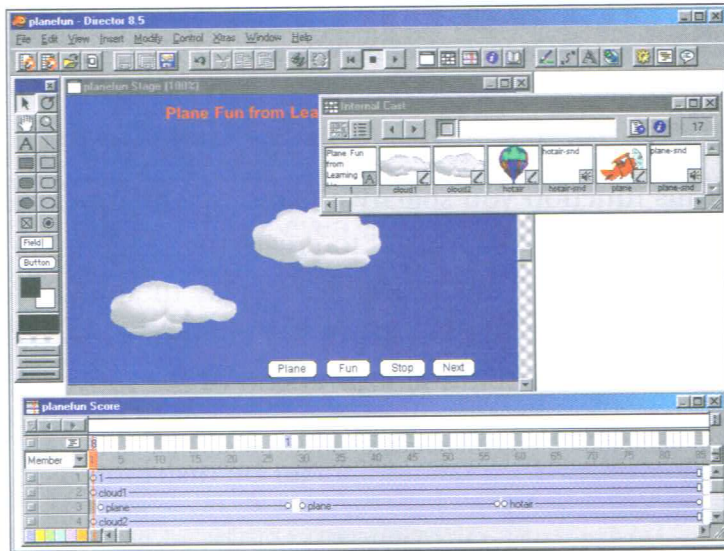
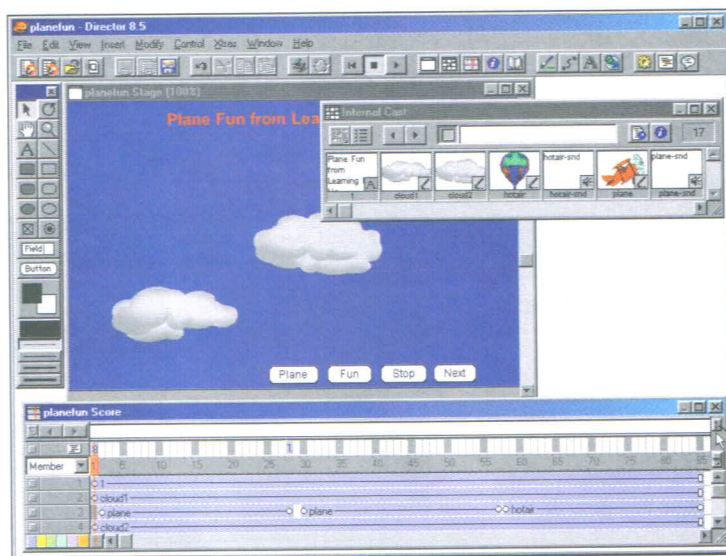
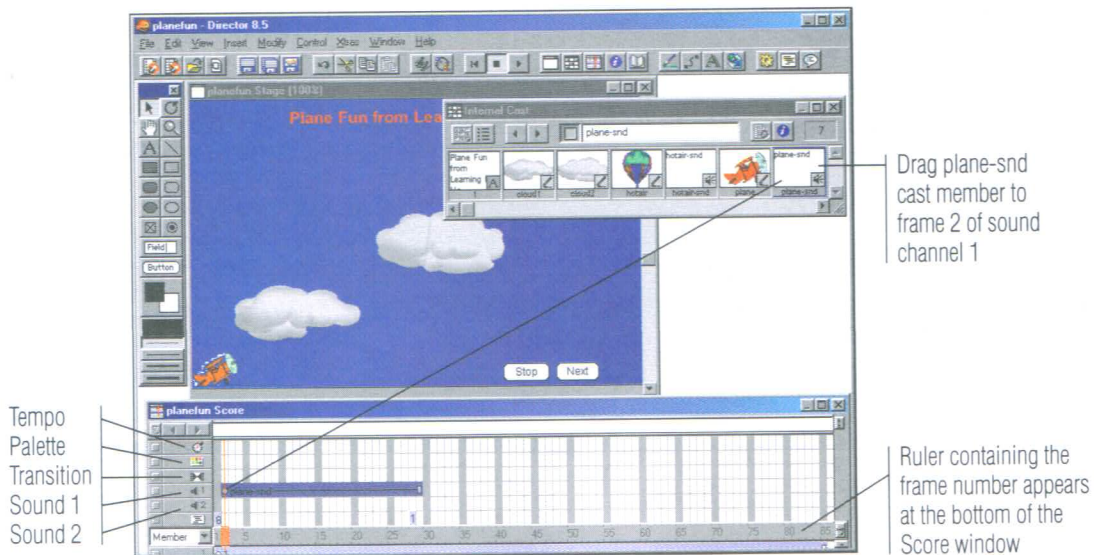


FIGURE H-29: The Hide/Show Effects Channels button in the Score window



Hide/Show  
Effects Channels  
button

FIGURE H-30: Placing the plane-snd cast member in sound channel 1



Tempo  
Palette  
Transition  
Sound 1  
Sound 2

Drag plane-snd  
cast member to  
frame 2 of sound  
channel 1

Ruler containing the  
frame number appears  
at the bottom of the  
Score window

# Distributing the movie

There are three main ways to distribute a Director movie. First, you can save the movie using the Save function; with this function you specify a name for the movie file and the Director appends a .dir extension. You used this process to create the planefun.dir movie. A .dir file can be distributed in the same manner as any other file. To play the movie, however, the user must have the Director program installed on his or her computer. Second, you can use the Create Projector function to create a stand-alone version of the movie. A stand-alone version is a file that can be played without having the Director program installed on the computer. Once a .dir or stand-alone file has been created, it can be distributed on a CD/DVD, on a Zip disk, or even attached to an e-mail.

## STEPS

### Creating a projector movie:

1. Close all windows except for the Stage window
2. Click **File** on the menu bar, click **Create Projector**, click **Files of type** list arrow, select **Director Movie**, if necessary, navigate to the **mymovie[your name]** folder if necessary, click **planefun**, then click **Add**

Figure H-31 shows the completed Create Projector dialog box.

3. Click **Create**

The Save projector as dialog box appears.

4. Type **fun-movie** in the File name text box, then click Save (Win) or yes (Mac)

Director creates the projector and saves it in the same folder where the Director movie is located.

5. Minimize the Director window, navigate to the **mymovie[your name]** folder, then double-click **fun-movie**

A window appears with the first frame of the movie. The file fun-movie uses an .exe extension. It is an executable file, which means it is self-running.

6. Click the **Fun**, **Plane**, and **Stop** buttons to test the movie shown in Figure H-32, close the movie window after you have tested all the buttons, then return to Director

FIGURE H-31: The Create Projector dialog box

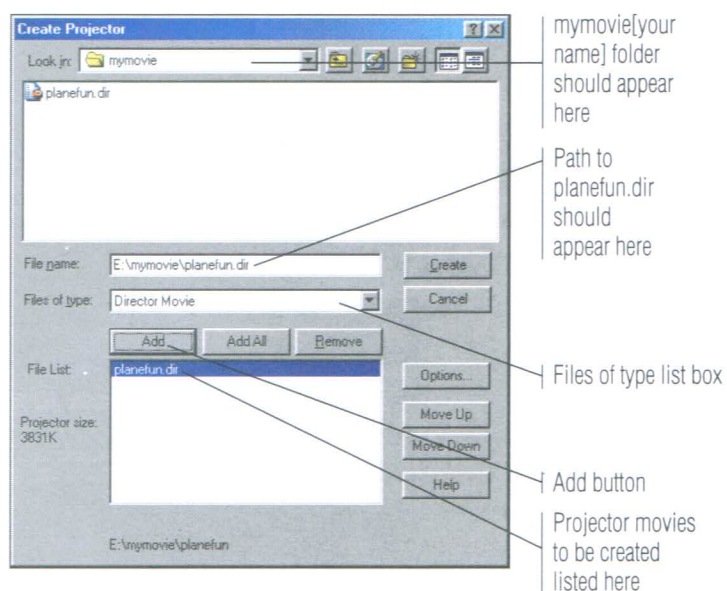


FIGURE H-32: A Projector window



The third way to distribute a movie is to use the Publish function to create a movie that can be displayed in a browser. When you use the Publish function, Director creates a movie in Macromedia's Shockwave format. Then, with the Shockwave player installed on the computer, the movie can be distributed over the Web. The user would not need the Director program to view the movie over the Web. Once a .dir movie has been made into a projector or a Shockwave format, it cannot be edited, even in Director. Before creating the Shockwave movie, you will use the Publish Settings feature to set certain options, including creating an HTML document that will automatically display the movie in your browser.

## STEPS

### Creating a Shockwave movie:

1. Be sure that the **planefun** movie appears in the Stage window, click **File** on the menu bar, then click **Publish Settings**

The Publish Settings dialog box appears as shown in Figure H-33. The Formats tab shows that Director will use the Shockwave Default template to create an HTML file named `planefun.htm` and save the Shockwave file as `planefun.dcr`. It also shows that the Shockwave movie will be output to the browser for viewing.

2. Your dialog box should resemble Figure H-33; if it does not, make the necessary changes
3. Click the **Compression** tab at the top of the dialog box, select **Standard** in the **Image Compression** section, then click **OK**

This step insures that transparency will be preserved in modified image sprites when they are played back over the Web.

4. Click **File** on the menu bar, click **Publish**, then if a message appears asking if you want to save the movie, click **Yes**

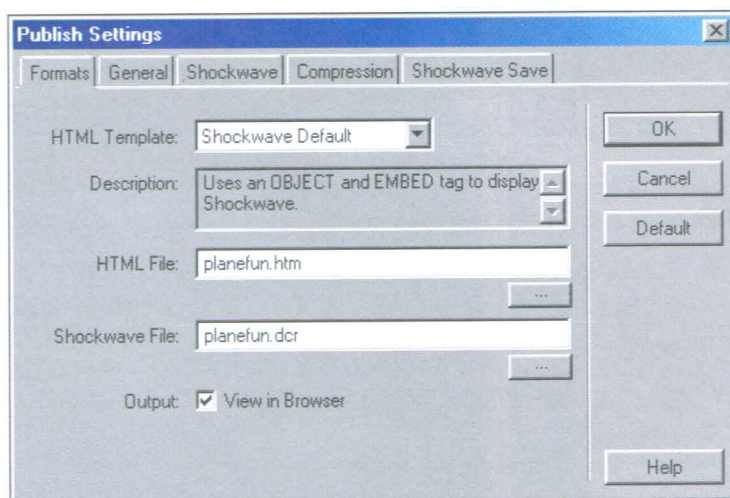
The Shockwave file (`planefun.dcr`) and the HTML document (`planefun.htm`) that plays the movie are created and saved to the `mymovie[your name]` folder. At this point, your browser may launch itself, and the movie will start automatically, as shown in Figure H-34. If not, complete Step 5 to view the movie using your browser. You may be prompted to install Shockwave player

5. Start your Web browser, navigate to the **mymovie[your name]** folder, then open the file **planefun.htm**

The movie opens in your browser.

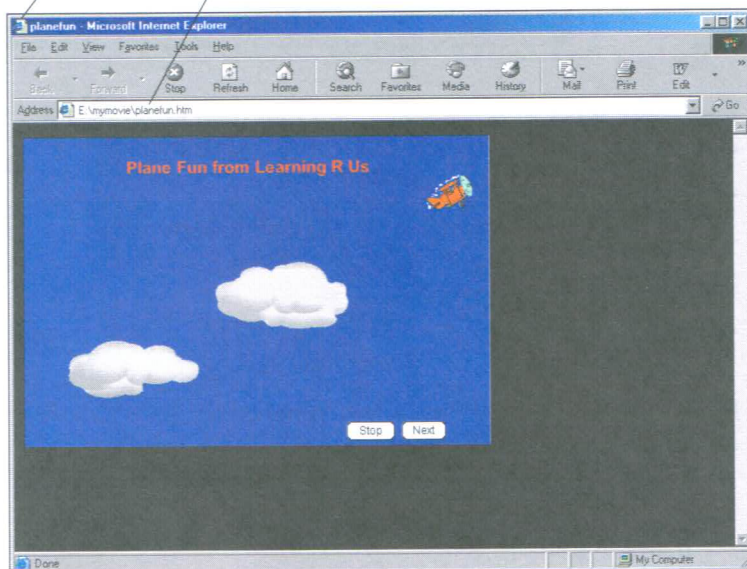
6. Click the buttons to play the movie
7. Close your browser, then exit Director

FIGURE H-33: *The Publish Settings dialog box*



Browser icon      URL of movie

FIGURE H-34: *The movie playing in a browser*

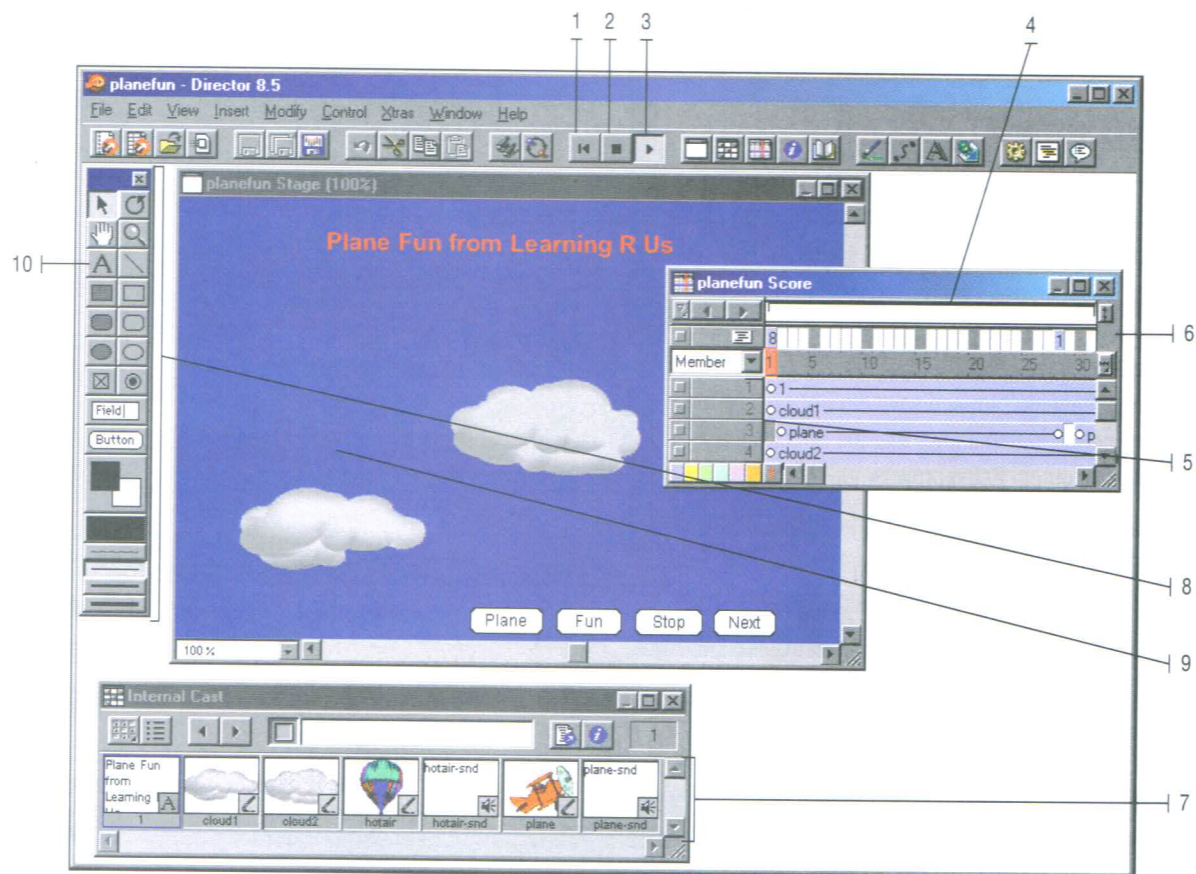


# End of Unit Exercises

## CONCEPT REVIEW

Label each of the elements shown in Figure H-35.

FIGURE H-35



Match the term with the statement that best describes it.

- |                        |                                   |
|------------------------|-----------------------------------|
| 11. Director           | a. One instance of a cast member  |
| 12. Sprite             | b. Used to set properties         |
| 13. Lingo              | c. A process to create animations |
| 14. Property Inspector | d. An authoring program           |
| 15. Tweening           | e. A scripting language           |

Select the best answer from the list of choices.

16. The first step in planning a movie is determining the \_\_\_\_\_.
- Target audience
  - Treatment
  - Specifications
  - Concept

17. Cast members can include all of the following except \_\_\_\_\_ .
- a. Buttons
  - b. Sounds
  - c. Video
  - d. All of the above can be cast members.
18. The Property Inspector could be used to \_\_\_\_\_ .
- a. Create buttons
  - b. Import cast members
  - c. Change the background color of a movie
  - d. Create an animation
19. The Button tool is found on the \_\_\_\_\_ palette.
- a. Tool
  - b. Button
  - c. Property Inspector
  - d. Draw
20. To place a cast member on the stage, you \_\_\_\_\_ .
- a. Import it from the Cast window
  - b. Copy it from the Cast window
  - c. Drag it from the Cast window
  - d. Link it from the Cast window
21. A “go to the frame” script causes the movie to \_\_\_\_\_ .
- a. Jump ahead one frame
  - b. Jump back one frame
  - c. Stop the movie
  - d. Pause
22. Which of the following cannot be used by Director to create animations?
- a. Recording a sprite's movement
  - b. Displaying a series of sprites one at a time
  - c. Tweening
  - d. All of the above can be used to create animations.
23. The \_\_\_\_\_ command is used to create a Director movie that can be displayed on the Web.
- a. Publish
  - b. Projector
  - c. HTML
  - d. Convert
24. The \_\_\_\_\_ command is used to create a stand-alone Director movie.
- a. Publish
  - b. Projector
  - c. Shockwave
  - d. Convert

25. To play a Shockwave movie you need \_\_\_\_\_ .

- a. A CD
- b. A Shockwave player
- c. The Director program
- d. A projector

26. Which of the following is part of a Director script?

- a. On buttonUp
- b. On MouseUp
- c. When ButtonUp
- d. When MouseUp

## SKILLS REVIEW

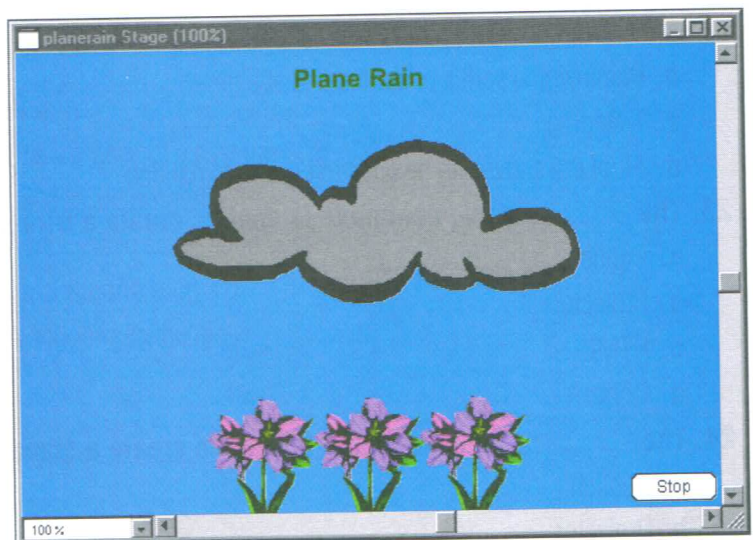
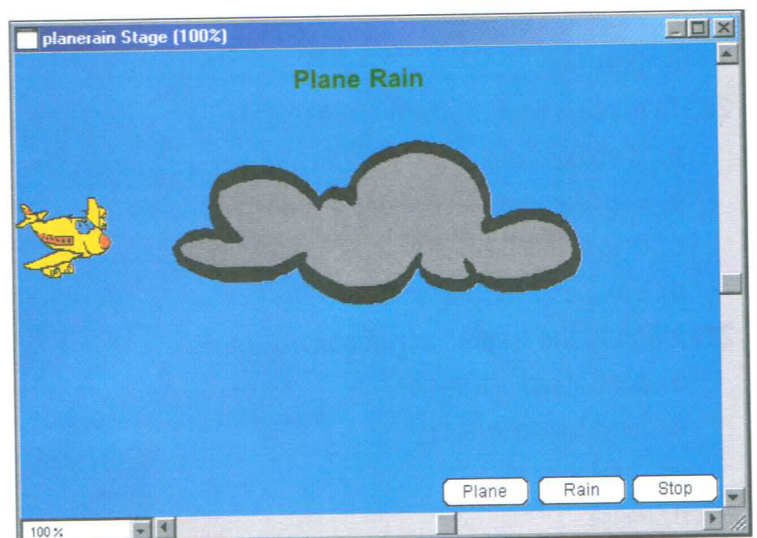
FIGURE H-36

### 1. Plan the movie.

- a. Use Figure H-36 to list the goal and target market audience for the movie.
- b. Sketch the storyboard with the navigation options that might have been used to develop the movie.
- c. Create a folder on your destination drive named UHSR[insert your name here].
- d. Copy the files from the drive and folder (UHSR) where your Project Files are located to the UHSR[your name] folder. (*Note:* You should copy six files: airplane.tif, airplane-snd.wav, flower.tif, rain.bmp, raincloud.tif, and rain-snd.wav.)
- e. Refer to Figure H-36 as you create the movie.

### 2. Set the movie properties and use the Tool palette.

- a. Start Director and open the following windows: Tool Palette, Stage, Score, and Cast.
- b. Set the movie properties to the following, if necessary: System palette: Win or Mac as appropriate; Width: 500; Height: 330; Background Color: light blue (#0099FF).
- c. Use the Text tool to create the heading "Plane Rain" with the following specifications: Center top location on the stage; Arial; Bold; 18 pt; green (#336633).
- d. Use the Property Inspector to create a background transparent effect and name the sprite "heading."



- e. Extend the heading score so that it occupies frames 1–95 in channel 1 of the Score window.
- f. Save the movie with the name planerain in the UHSR[your name] folder.

### 3. Assemble the cast.

- a. Import the following six files from the UHSR[your name] folder on your destination drive into the movie: airplane, airplane-snd, flower, rain, raincloud, and rain-snd. If requested, set the graphics to bitmap, and the stage to 16 bits.
- b. Show the cast members as thumbnails. Then, starting in frame 2 of channel 2, place the airplane at the left side of the stage as shown in Figure H-36 and make the background transparent.
- c. Starting in frame 1 of channel 4, place the rain cloud near the top center of the stage, as shown in Figure H-36, and make the background transparent. Extend the rain cloud score so that it occupies frames 1–95.
- d. Play and then save the movie.

### 4. Animate the movie.

- a. Verify that the Tweening check box is selected in the Sprite option of the Preferences choice of the File menu.
- b. Insert a keyframe at frame 2 of the airplane score.
- c. Drag the airplane (using the circle) horizontally across the stage so that it passes behind the cloud and off of the right side of the stage.
- d. Insert a keyframe at frame 29 of the airplane score.
- e. Modify the airplane sprite to use tweening.
- f. Rewind and play the movie. The airplane should move from left to right across the stage and behind the cloud.
- g. Make adjustments as necessary and save the movie.

### 5. Create scripts with Lingo.

- a. Insert a script into frame 1 of the script channel to cause the movie to pause.
- b. Insert a script into frame 95 of the script channel to cause the movie to loop, starting at frame 30.
- c. Select frame 1 of channel 2 and use the Button tool to create the Plane button as shown in Figure H-36. Create a script for the button such that clicking it causes the playback head to go to frame 2.
- d. Rewind and play the movie. Click the Plane button. Stop the movie and save it.

### 6. Add a second animation.

- a. Create the same animation a second time using a new airplane sprite (with a transparent background) in frames 30–67 of channel 2.
- b. Select frame 40 of channel 3, drag the rain cast member behind the cloud, and make the background transparent. Make the sprite go from frame 40 to frame 74.
- c. Insert a keyframe at frame 40 of the rain score.
- d. Drag the rain image (using the circle) vertically straight down the stage so that it goes off the bottom of the stage.
- e. Insert a keyframe at frame 74 of the rain score.
- f. Modify the rain sprite to use tweening.
- g. Rewind and play the movie, then click the Plane button. Stop the movie.
- h. Make adjustments as necessary and save the movie.

### 7. Create interactivity with buttons and add cast members.

- a. Insert a script into frame 29 of the script channel to cause the playback head to go to frame 2.
- b. Using frame 1 of channel 3, create the Rain button, as shown in Figure H-36, and add a script that will cause it to go to frame 30. Reduce the button score to frame 1 only.

- c. Using frame 1 of channel 5, create the Stop button, as shown in Figure H-36, and add a script that will cause it to go to frame 1. Increase the button score to occupy frames 1–95.
- d. Select frame 68 of channel 2 and place the flower cast member on the stage to create one of the flower sprites shown in Figure H-36. Make the background transparent.
- e. Select frame 75 of channel 3 and place the flower cast member on the stage to create another flower sprite. Make the background transparent. Reduce the sprite in the Score window to frames 75–95.
- f. Select frame 82 of channel 6 and place the flower cast member on the stage to create another flower sprite. Make the background transparent. Reduce the sprite in the Score window to frames 82–95.
- g. Rewind and play the movie, test the buttons and make adjustments as necessary, then stop the movie and save it.

#### 8. Add sound.

- a. Place the airplane-snd cast member into frame 2 of sound channel 1 and extend the airplane-snd score so that it occupies frames 2–67.
- b. Place the rain-snd cast member into frame 40 of sound channel 2 and extend the rain sound to frame 74.
- c. Rewind and play the movie, test the buttons and make adjustments as necessary, then save the movie.

#### 9. Distribute the movie.

- a. Create a projector movie and save it to your UHSR[your name] folder with the file name rain-movie.
- b. Run the projector movie and test all the buttons.
- c. Close the Projector window.
- d. Create a Shockwave movie named planerain.
- e. Open your browser, run the Shockwave movie, and test all the buttons.
- f. Close the browser and exit Director.

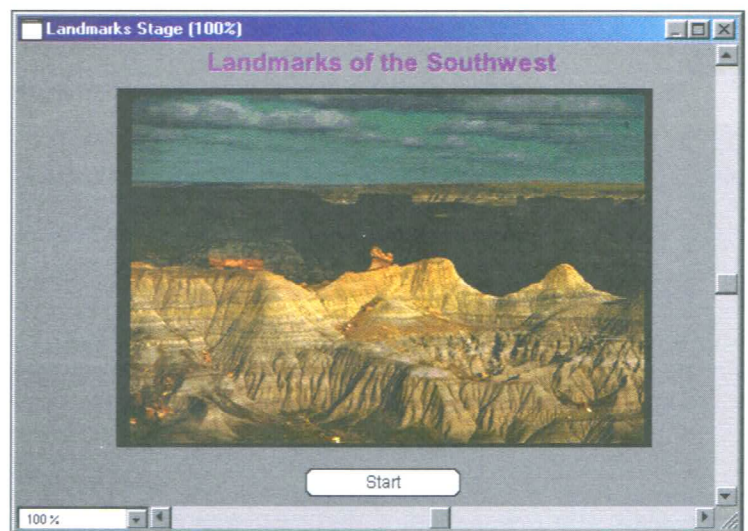
## INDEPENDENT CHALLENGE 1

You have been asked to create a Director movie that will become part of a series highlighting national landmarks. This movie will include an introductory screen that, when the user clicks the Start button, will be converted to four images. The user can click on each image to enlarge it. Figure H-37 shows the three screens that the user sees.

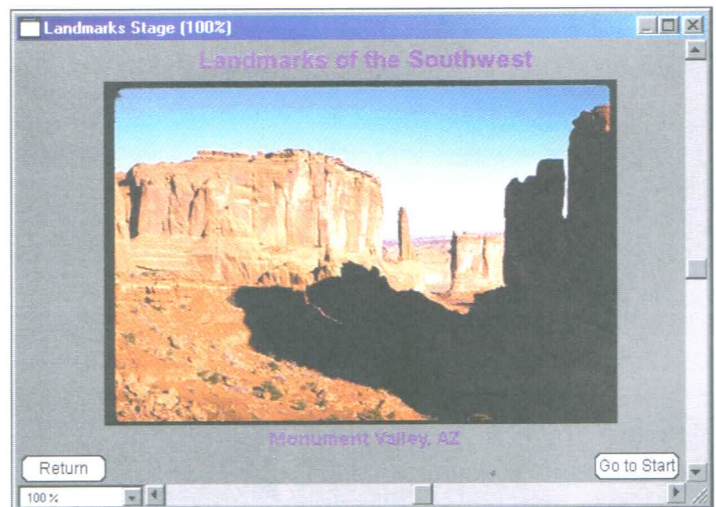
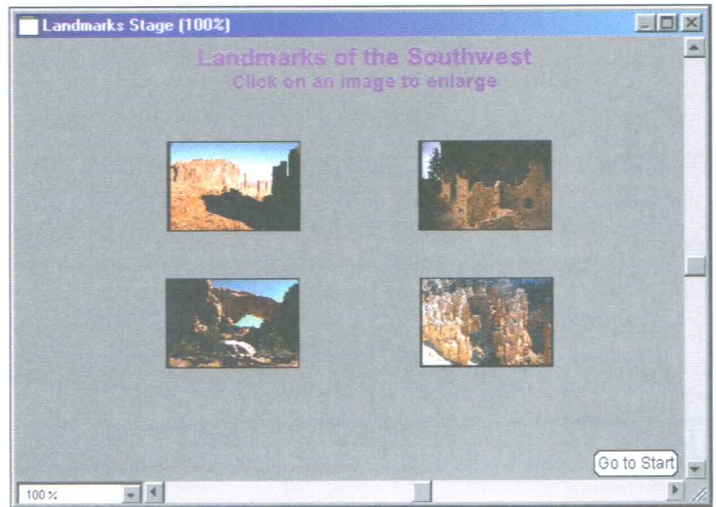
To complete this independent challenge:

- a. Create a folder on your destination drive titled UHIC1[insert your name here]. Copy all files from the drive and folder (UHIC1) where your Project Files are located to UHIC1[your name]. (Note: You will copy six files.)
- b. Start Director and open the Stage, Cast, Score, and Tool palette windows.

FIGURE H-37



- c. Set the following movie properties: System: Win or Mac; Size: 500 × 330; Background: gray (#BBBBBB).
- d. Import the following files: arches-sm, bryce-sm, canyon-lg, dwelling-sm, monument-lg, and monument-sm. Be sure to set the graphics so they all have the same settings in a 16-bit system.
- e. In frame 1 of the script channel, enter a “go to the frame” script.
- f. Select frame 1 of channel 1, then use the text tool to create the heading “Landmarks of the Southwest” in Arial, 18 pt, bold, purple; the background should be transparent. Extend the score from frame 1 to frame 82.
- g. Select frame 1 of channel 2, then drag the canyon-lg image to the center of the stage. Reduce the score for the image to frame 1 only.
- h. Select frame 1 of channel 3, then create the Start button at the bottom of the screen. Create a script for the button to have it go to frame 5. Reduce the score for the button to frame 1 only.
- i. Select frame 5 of channel 2, then drag the monument-sm image to the upper-left side of the stage. Extend the score for the image to frame 50. Create a script for the image so that the image goes to frame 55.
- j. Continue placing the other three images on the stage as follows:



NAME	LOCATION ON SCREEN	CHANNEL	START FRAME	END FRAME
bryce-sm	lower right	3	20	50
arches-sm	lower left	4	35	50
dwelling-sm	upper right	5	50	50

- k. Select frame 50 of channel 6 and use the Text tool to create the subheading “Click on an image to enlarge” in Arial, 14 pt, purple; the background should be transparent. Reduce the subheading score to frame 50.
- l. Select frame 50 of channel 7, create a button at the right of the stage, type *Go to Start*, add a script that goes to frame 1, then extend the button's score to frame 82.

- m. In frame 50 of the script channel, enter a “go to the frame” script.
- n. Select frame 55 of channel 2, drag the monument-1g image to the middle of the stage, then extend the score to frame 82.
- o. Select frame 55 of channel 3, create the Return button below and to the left of the image, extend the score to frame 82, then enter a “go to frame 50” script.
- p. Select frame 55 of channel 8 and create the title “Monument Valley, AZ” below the image in Arial, 14 pt, purple, bold. Make the background transparent, and extend the score to frame 82, if necessary.
- q. Select frame 82 of the script channel and enter a “go to the frame” script.
- r. Save the movie with the name Landmarks, then rewind and play it.
- s. Click the Start button, then click the monument image.
- t. Test all the buttons and make adjustments as necessary.

## INDEPENDENT CHALLENGE 2

You have been asked to create a Director movie that will become part of a series of quiz questions. This movie will include an introductory screen that, when the user clicks the Listen button, will play a sound. When the user chooses one of the images on this screen, an appropriate message appears and sound plays. Figure H-38 shows the three screens that the user sees.

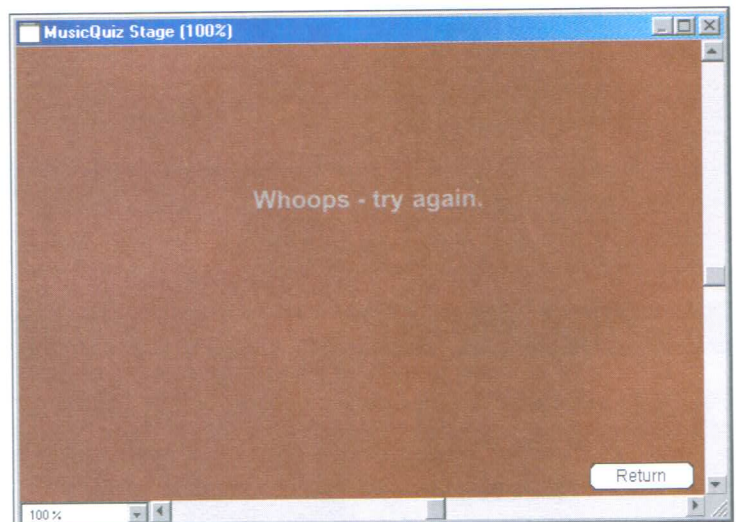
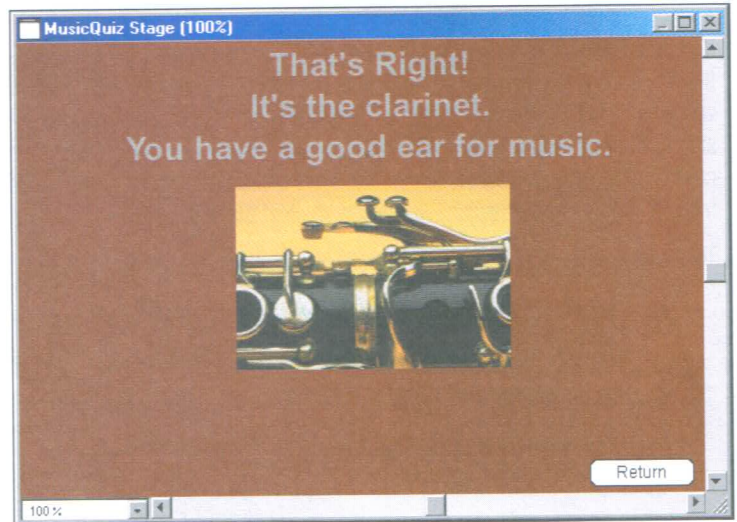
FIGURE H-38

To complete this independent challenge:

- a. Create a folder on your destination drive titled UHIC2[insert your name here]. Copy all files from the drive and folder (UHIC2) where your Project Files are located to UHIC2[your name].
- b. Start Director and open the Stage, Cast, Score, and Tool palette windows.
- c. Set the following movie properties: System: Win or Mac; Size: 500 × 330; Background: maroon (#800000).
- d. Import the following files from your UHIC2[your name] folder: applause-snd, clarinet, clarinet-snd, flute, and thud-snd. Be sure that all graphics are set to use the same 16-bit setting.
- e. Use the script channel to pause the movie at frame 1 and again at frame 2.
- f. Create the heading “Which Instrument Plays the Music?” in Arial, 24 pt, bold, gray; the background should be transparent. Have the heading appear in frames 1 and 2 only.



- g. Create the Listen button at the bottom center of the screen, and have the movie jump to frame 2 when the user clicks the button. Have the button appear in frames 1 and 2 only.
- h. Have the flute appear on the left of the stage in frames 1 and 2 only. When the user clicks on the flute, have the movie jump to frame 35.
- i. Have the clarinet appear on the right of the stage in frames 1 and 2 only. When the user clicks on the clarinet, have the movie jump to frame 5.
- j. Have the clarinet-snd sound play in frame 2 only.
- k. Have the applause-snd sound play in frames 5–32.
- l. Have the thud-snd sound play in frames 35–62. (*Hint:* You can place more than one sound in a sound channel.)
- m. Have the following heading appear in frames 5–32 only: "That's Right! It's the clarinet. You have a good ear for music." It should be in Arial, 24 pt, bold, gray on a transparent background in the center of the stage. (*Hint:* Use Modify, Paragraph, Align Center option.)
- n. Have the following heading appear in frames 35–62 only: "Whoops — try again." It should be in Arial, 18 pt, bold, gray on a transparent background in the center of the stage.
- o. Have the movie pause at frames 32 and 62.
- p. Create a Return button that will appear in frames 32 and 62 that causes the movie to jump to frame 1 when the user clicks the button.
- q. Save the movie as MusicQuiz, then rewind and play it.
- r. Click the Listen button, then click each image in turn.
- s. Make adjustments as necessary.



## INDEPENDENT CHALLENGE 3

You have been asked to create a Director movie that has an element of surprise. This movie will include an introductory screen that asks the user to find the surprises. The assumption is that the user will start clicking on the screen. When the user clicks on certain parts of the screen, an animation will play. This movie includes two animations: a bird flying from behind trees and a butterfly flying from behind flowers. These "surprises" are created by first placing a background graphic (garden) on the stage, followed by the sprite to be animated (bird, butterfly), followed by a graphic that covers up the sprite (trees, flowers). The trees and flowers sprites have scripts that cause the movie to jump to the appropriate frame to play an animation. Figure H-39 shows the three screens that the user sees.

To complete this independent challenge:

- Create a folder on your destination drive titled UHIC3[insert your name here]. Copy all files from the drive and folder (UHIC3) where your Project Files are located to UHIC3[your name]. (Note: You will copy seven files.)
- Start Director and open the Stage, Cast, Score, and Tool palette windows.
- Set the following movie properties: System: Win or Mac; Size: 384 × 256; Background: white.
- Import the following files: bird, bird-snd, butterfly, flowers, garden, garden-snd, and trees.
- Use the script channel to pause the movie at frame 1.
- Use the following table to create the next part of the movie:

FIGURE H-39



SPRITE	PURPOSE	PLACEMENT	DISPLAYS OR PLAYS
garden	Used as a background graphic	Covers entire stage	During entire movie
bird	Animation	Starts near top center of stage and moves off the upper-right corner of the stage	When user clicks on trees sprite
butterfly	Animation	Starts near the lower-left corner of the stage and moves off the lower-right corner of the stage	When user clicks on flowers sprite
trees	Used to hide the bird sprite	Aligned with trees in garden background at top center of the stage	During entire movie
flowers	Used to hide the butterfly sprite	Aligned with flowers in garden background at lower-left corner of the stage	During entire movie
bird-snd	Sound to accompany the bird animation	In sound channel	During bird animation
garden-snd	Sound to accompany the butterfly animation	In sound channel	During butterfly animation

- g. Create the following heading at the bottom center of the stage: "Find the surprises." It should be in Arial, 14 pt, black. Have the heading appear only in frame 1.
- h. Have the movie return to the beginning after each animation has played.
- i. Save the movie as Surprise, then rewind and play it.
- j. Click on the trees and flowers to view the animations.
- k. Make adjustments as necessary.



## INDEPENDENT CHALLENGE 4

The Web is a rich resource for information about Macromedia Director. In addition to the Macromedia site itself, many other resources are available for creating Director movies. You can use your favorite search engine and the search terms "Macromedia Director movies" to search for information and tutorials on Director. You can also complete the steps in this independent challenge to find resources on Director.

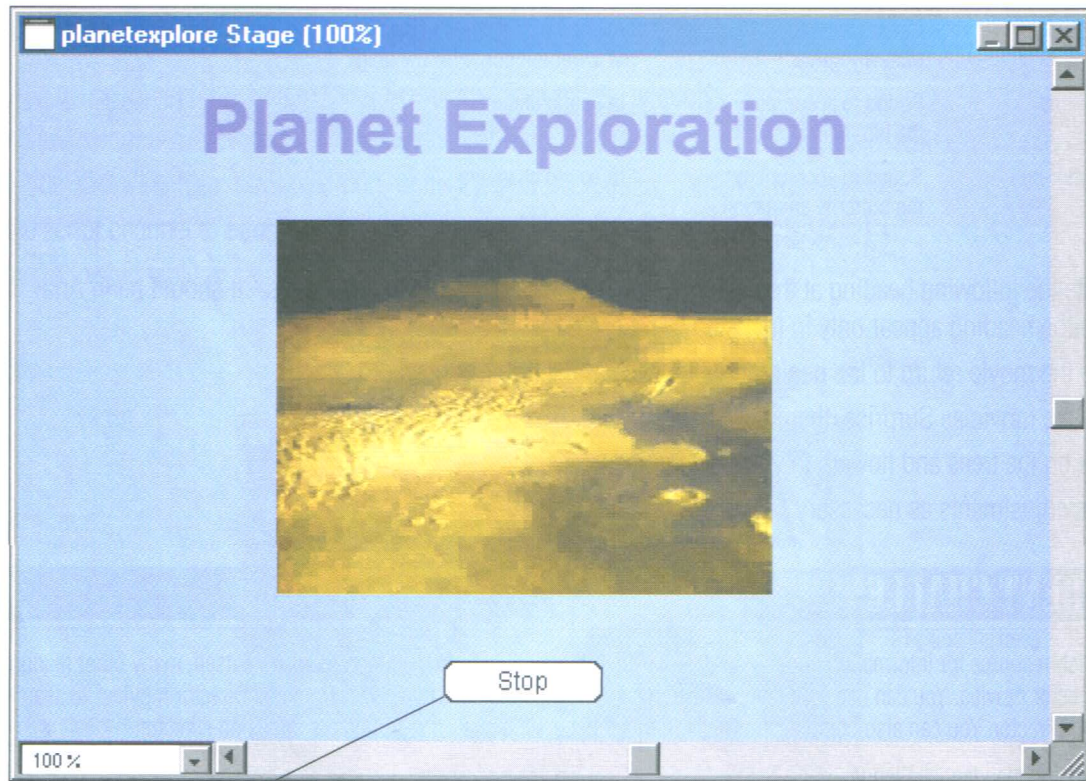
To complete this independent challenge:

1. **Connect to the Internet.**
2. **Go to <http://www.course.com/>, navigate to the Student Online Companion for this book, and then click the link for Unit H.**
3. **The Unit H link contains links to Web sites with information about Director. Click each link to visit the site.**
4. **Write a summary report that answers the following questions:**
  - a. Who publishes the Web site?
  - b. When was it last updated?
  - c. What types of resources are available?
  - d. What are the three most useful resources you found and why are they so valuable?
5. **Review two sample movies from the Maricopa site. For each one, include the following information:**
  - a. The goal, target audience, and treatment
  - b. Features that you liked and why
  - c. Features that could be improved and why
  - d. New Director features/techniques that you learned from the movie

## VISUAL WORKSHOP

Create the Director movie shown in Figure H-40, which includes a video clip. First, create a folder named UHVV[your name] on your destination drive. Copy the planet.avi file from the drive and folder (UHVV) where your Project Files are located to your UHVV[your name] folder. Use Director to create a Director movie and name it planetexplore. Be sure to save the movie to the UHVV[your name] folder. Use the callout on Figure H-40 to decide on the other specifications for the movie. *Note:* The opening frame of the movie shows the title and the Play button. When the user clicks the Play button on the stage, the movie plays as seen in Figure H-40. You must have Quicktime installed to run the movie.

FIGURE H-40



Stop button stops the video clip and returns to the beginning of the Director movie, which shows only the heading Planet Exploration and the Play button

UNIT	FILE SUPPLIED ON PROJECT DISK	LOCATION FILE IS USED IN UNIT
	<b>UGmysite:</b> bgtexture.gif resort-lg.jpg roche2-lg.jpg roche-lg.jpg roche-sm.jpg star.gif sunmtn-sm.jpg view.avi warm-sm.jpg whale-snd.wav	Lessons
	<b>UGSR:</b> bluetexture.jpg boom.wav fireworks.avi fireworks.jpg fireworks1.jpg fireworks2.jpg fruits.jpg usflag.gif	Skills Review
	<b>UGVW:</b> Capitol-east.jpg Capitol-west.jpg	Visual Workshop
<b>H</b>	<b>UHIC1</b> <b>UHIC2</b> <b>UHIC3</b> <b>UHLessons</b> <b>UHSR</b> <b>UHVW</b>	See files listed in each folder below.
	<b>UHIC1:</b> arches-sm.tif bryce-sm.tif canyon-lg.tif dwelling-sm.tif monument-lg.tif monument-sm.tif	Independent Challenge 1
	<b>UHIC2:</b> applause-snd.wav clarinet.tif clarinet-snd.wav flute.tif thud-snd.wav	Independent Challenge 2

UNIT	FILE SUPPLIED ON PROJECT DISK	LOCATION FILE IS USED IN UNIT
	<b>UHIC3:</b> bird.tif bird-snd.wav butterfly.tif flowers.tif garden.tif garden-snd.wav trees.tif	Independent Challenge 3
	<b>UHLessons:</b> cloud1.gif cloud2.gif hotair.gif hotair-snd.wav plane.bmp plane-snd.wav	Lessons
	<b>UHSR folder:</b> airplane.tif airplane-snd.wav flower.tif rain.bmp raincloud.tif rain-snd.wav	Skills Review
	<b>UHVW:</b> planet.avi	Visual Workshop

# Glossary

**ActiveX controls** ► allows movies, animations, and sounds to be delivered over the Internet

**AIFF (Audio Interchange File Format)** ► and **AIFFC** (Compressed) audio file formats developed by Apple and used as a standard for Macintosh computers

**analog wave pattern** ► recurring pattern of sound waves

**animation** ► a series of still images that when displayed in a sequence gives the illusion of movement. Also, the second step in the process of creating 3-D objects and scenes; the process of defining the object's motion as well as how the lighting and views change during the animation

**anti-aliasing** ► smoothes the edges by blending the colors on the edge of the image with the adjacent colors; because bitmaps are made up of rectangular pixels the outside edge of the image can appear jagged—anti-aliasing adjusts for this problem

**applets** ► small programs that can be shared with other applications and that are developed for a specific purpose, for example, to track stock prices and periodically display them on a Web page

**asymmetrical balance** ► achieved by arranging non-identical elements on both sides of a center line on the screen

**audience** ► a multimedia title's users

**authoring program** ► used to create multimedia applications

**balance** ► refers to the distribution of optical weight in the layout of an image

**binary digit (bit)** ► smallest unit used to represent the coding of data in a computer

**binary system** ► two symbols (1 and 0) used to indicate "on" (1) and "off" (0), as the way the computer represents data and instructions

**bitmap graphic** ► represents the graphic image as an array of dots called pixels

**bits** ► binary digits

**BMP** ► bitmap graphic file format

**bold** ► a font format that is used for emphasis

**browser** ► a visual interface that interprets Web documents and allows for the display of graphics

**budget** ► outlines the costs of multimedia projects

**Cascading Style Sheet (CSS)** ► a template that defines the way a Web page appears, including text fonts

**cel animation** ► based on the changes that occur from one frame to another to give the illusion of movement

**child page** ► a Web page that has a direct link to a parent page as determined by the file structure

**clip art** ► ready to use illustrations

**codecs** ► compression/decompression programs used to reduce the size of files

**color depth** ► color information recorded for each pixel; the range of colors available for pixels

**Common Gateway Interface (CGI)** ► a specification that allows programs to be written that run on a server and provide a way to get information from a user and return information to a user

**computer playback system** ► a computer system capable of delivering multimedia

**cookies** ► small files containing information about a user that are stored on a user's hard drive and made available to specific Web sites

**copyright** ► provides legal protection and grants certain rights to its owner

**decorative font** ► classification of a type of font, such as script-type, that is more stylish and formal

**deliverables** ► the components of a project that will be provided to a client

**derivative works** ► materials based on an original work such as an adaptation or dramatization

**digital camera** ► used to capture still images just like a regular camera, but in a digital form

**Director Shockwave Studio** ► comprehensive authoring package that allows developers to create multimedia applications for CD-ROM, DVD, and Web delivery

**drawing programs** ► used to create draw-type graphics; provides for freehand as well as geometric shapes; useful in creating designs where precise dimensions and relationships are important

**drawing tablet** ► pressure-sensitive tablet used to generate graphics, including fonts based on your handwriting

**draw-type graphics** ► (also called **vector graphics**) represent an image as a geometric shape made up of straight lines, ovals, and arcs

**edutainment** ► the combination of education and entertainment

**electronic slide show presentation** ► similar to presentations using traditional overhead transparencies or slides but superior because of the power of the delivery system—the computer, which allows multimedia elements to be part of the presentation

**elements database** ► used to keep track of multimedia elements used in a title, determine the overall file size, and provide a reference for filenames that might be used in scripting

**exploratory navigation scheme** ► provides little structure or guidance for the user; relies on user interaction such as clicking on objects that appear on the screen

**external storage devices** ► provide additional storage space to relieve the pressure on a computer's hard drive

**Fair Use** ► material that can be used without infringing on a copyright

**feature creep** ► when new features are added, which changes the original specifications and therefore changes the development time

**file compression** ► a technique used to reduce a file size of graphics, sounds, videos, and so on; can be used to speed up the transfer of files through the Web.

**file format** ► the type of file created by a program; common graphic file formats include **TIFF** (Tagged Image File Format), **BMP** (Bitmap), **PCX** (Windows Paint), and **PICT** (Macintosh picture format,) which are the standard file formats for multimedia development, and **JPEG** (Joint Photographer Experts Group), **GIF** (Graphics Interchange file format) and **PNG** (Portable Network Graphics), which are the standard file formats for the World Wide Web

**font formats** ► a way to apply emphasis to text such as bold, italic, or underline

**fonts** ► synonymous with typefaces in a print environment; useful in focusing attention on certain text on the screen, enhancing readability, setting a tone (serious, lighthearted), and projecting an image (progressive, conservative)

**fontset** ► used in Web page design to specify which font(s) to try to use and in which order

**frames** ► used in Web pages as a way to divide a Web page into sections

**frame rate** ► speed of an animation

**frequency** ► indicated by the distance between the peaks in a sound wave—the greater the distance, the lower the sound

**GIF** ► Graphics Interchange file format

**goals** ► statements that set direction in support of the company vision

**graphics tablet** ► a peripheral device that can be used for freehand drawing

**hertz (Hz)** ► unit of measure used to measure frequency in a sound wave

**HyperCard** ► one of the first multimedia authoring programs to use a card metaphor

**hyperlinks** ► text or graphics that are coded to "jump" to another location in their Web pages

**HyperText Markup Language (HTML)** ► the "coding language" for Web documents

**HTML tags** ► used to mark text, for example, the HTML tags `<i>` and `</i>` display all text within the tags in italic—*Welcome!* would be coded as `<i>Welcome!</i>` in HTML

**HTTP (HyperText Transfer Protocol)** ► a standard format that defines how data, such as video, is transferred from computer to computer on the Internet

**icon-based program** ► a multimedia authoring program that uses a flowchart scheme to represent content or a particular event

**image editing programs** ► useful in making changes in images, such as changing the brightness or contrast, or applying textures or patterns

**image size** ► the display size of an image represented in pixels, that is an image size of 640×480 would be 640 pixels wide and 480 pixels high

**installed market** ► the computers in use

**interactivity** ► the ability of the user to interact with an application

**interlaced GIFs** ► graphics files that can load in stages on the Web

**interactive titles** ► intended for use by individuals in a one-on-one situation or, in cases such as Web-based games, by two or more individuals

**inter-screen unity** ► the design that users encounter as they navigate from one screen to another; provides consistency throughout a title

**Internet** ► a vast communications system linking computers around the world

**Intranet** ► an internal computer network set up to facilitate communications among employees, customers, vendors, and selected others

**intra-screen unity** ► how the various screen elements relate on the same screen

**JAVA** ► a programming language used to create Web-related applications

**JavaScript** ► scripting language that is specifically designed to add interactivity to Web pages

**JPEG** ► (Joint Photographer Experts Group) a graphics file format

**Lingo** ► a scripting language in Director

**looping** ► a technique that sets an animation to play over and over until the user stops the animation or the loop is complete

**lossless** ► a compression process that preserves the exact image throughout the compression and decompression process

**lossy** ► a compression process that eliminates some of the data in the image and therefore, provides greater compression ratios than lossless compression

**Macromedia Director** ► time-based authoring program that uses a movie metaphor

**Macromedia Flash** ► an animation program for developing 2-D animations delivered on the Web

**masks** ► used in graphics programs to isolate parts of an image so that you can work on that part

**MIDI (Musical Instrument Digital Interface)** ► a standard format that enables computers and electronic musical instruments to communicate sound information

**milestones** ► significant accomplishments during the development process, such as the development of a prototype for usability testing

**modeling** ► the first step in the process of creating 3-D objects and scenes; the process of drawing various views of an object (top, side, cross-section) by setting points on a grid

**morphing** ► the process of blending together two images into a series of images

**movement** ► relates to how the user's eye moves through the elements on the screen

**MP3** ► a popular audio file format standard for delivery of music on the Internet because it can compress very large files including complete songs into small file sizes while maintaining CD quality audio

**MPEG (Motion Pictures Experts Group)** ► a file format that provides frame to frame compression

**multimedia** ► a computer-based, interactive experience that incorporates text, graphics, sound, animation, video, and virtual reality

**multimedia applications** ► a broad term that covers all uses of multimedia

**multimedia elements** ► text, graphics, sound, video, animation, and virtual reality

**multimedia presentations** ► involve a presenter and an audience of one or more persons

**multimedia titles** ► refer to specific products, including CD-ROM/DVD-based games like "Flight Simulator," and educational titles such as "Grandma and Me"

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**nature of an element** ► refers to an element's shape, color, brightness, and type

**no balance** ► a design that has elements arranged on the screen without regard to the weight on both sides of the center line

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**object layering** ► a feature in a graphics program that allows you to include more than one bitmap in an image and edit each bitmap independently of the others

**objectives** ► statements that are clear, measurable, and obtainable, and that are developed from the company goals

**openScript** ► a scripting language in Toolbook

**OpenType** ► a text standard supported by Microsoft and Adobe

**optical center** ► a point somewhat above the physical center of the screen

**optical Character Recognition (OCR)** ► a program used to capture text by translating the text into a format that can be used by a word processing program

**optical weight** ► the ability of an element (such as a graphic, text, headline, or subhead) to attract the user's eye

**outsource** ► contract a service provider, that is, someone specializing in developing multimedia applications, to produce the title

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**paint programs** ► used to create bitmap images; useful in creating original art because they provide the tools (brushes, pens, and so on) used by artists

**parent page** ► a Web page that has a direct link to a child page as determined by the file structure

**path animation** ► moves an object along a predetermined path on the screen; the path could be a straight line or it could include any number of curves; often the object does not change, although it might be resized or reshaped

**PCX** ► Windows Paint graphics file format

**PICT** ► Macintosh graphics file format

**pixels (picture elements)** ► the smallest units a monitor can display

**players** ► programs that allow users to run multimedia applications on their computers

**plug-in** ► a program that permits a Web browser to access and execute files that the browser would not normally recognize

**PNG** ► Portable Network Graphics file format used for graphics that will be displayed on the Web

**postscript** ► default fonts for the Macintosh; usually installed with the operating system

**PowerPoint** ► widely used program for creating electronic slide show presentations

**processor** ► the component that controls the operations of the computer system and performs calculations

**programming code** ► instructions carried out by the computer

**programming languages** ► used to create applications and, in multimedia, to produce sophisticated features such as creating animations and searching a database

**progressive JPEGs** ► files that can load in stages on the Web

**project budget** ► the financial plan that affects project decisions

**public domain** ► material that does not have a copyright

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**random-access memory (RAM)** ► temporary computer memory used to store instructions and data that are used while an application is running

**Real Audio(.ra)** ► a file format developed by RealNetworks specifically for streaming over the Internet; when sounds are saved in this format they are automatically compressed to reduce the file size

**references** ► examples that prove the service provider's expertise in creating similar projects, or that provide concrete examples of the service provider's skills which are required to complete the project defined in the Request for Proposal

**rendering** ► the final step in the process of creating 3-D objects and scenes; the process of giving objects attributes such as colors, surface textures, and amounts of transparency

**request for proposal (RFP)** ► a document that clearly defines a company's needs for a given project; the RFP is made available to vendors who want to bid on the project

**right of publicity** ► rights of individuals that requires permission and/or payment for using a person's name, image, or persona

**rollover** ► function performed when an action occurs as the mouse pointer rolls over (points to) an object

**RTSP (Real-Time Streaming Protocol)** ▶ a continuous playing streaming technology in which the user's computer is in constant contact with the server playing the video

**sample rate** ▶ the number of times the sample of a sound is taken

**sample size** ▶ the amount of information stored about the sample of a sound

**sampling** ▶ the process that changes analog signals (sound waves) to digital signals (digits)

**sans serif** ▶ a font that does not have a line or curve extension from the end of a letter

**schedule** ▶ specifies a project's beginning and end dates, as well as milestones along the way

**scripts** ▶ program code for specific tasks such as a rollover

**scripting languages** ▶ programming languages used to create scripts

**seek time** ▶ time required to find a specific piece of data on a CD; measured in milliseconds

**serif** ▶ a font that has a line or curve extension from the end of a letter

**server** ▶ a computer with software that responds to other computers and makes data and programs available to them

**sequential navigation scheme** ▶ takes the user through a more or less controlled, linear process

**Shockwave** ▶ program that allows an Internet user to play applications created with Macromedia Director

**skins** ▶ designs for media players with controls such as start, stop and pause

**SMIL (Synchronized Multimedia Integration Language)** ▶ a program created to enable developers to specify what should be presented, when it should be presented, and to control the use of transitions within a presentation

**sound waves** ▶ representations of the vibrations created when a sound is made

**sprite** ▶ one instance of a cast member in a Macromedia Director movie

**stock photographs** ▶ ready to use photos often sold by companies specializing in providing graphics for multimedia applications

**storyboard** ▶ representation of what each screen will look like and how the screens are linked

**strategic planning** ▶ involves determining where a company is in its industry and where it wants to be; reflects the corporate vision

**streaming media** ▶ a technology that allows audio and video to be played in real-time on the Internet

**symmetrical balance** ▶ achieved by arranging elements as horizontal or vertical mirrored images on both sides of a center line of a screen

**task analysis** ▶ identifies the tasks to be done and who is responsible for each task in the project development

**telecommuting** ▶ working remotely

**text box** ▶ an area on the screen that holds text that can be scrolled; a useful technique to help minimize text on a page

**thumbnail** ▶ a small image that is linked to a larger version of the same image

**TIFF** ▶ Tagged Image File Format; used for graphics

**timelines** ▶ used to identify dates for the deliverables and key components of the project

**Toolbook** ▶ an authoring program based on a book metaphor

**topical navigation scheme** ▶ allows the user to select from an array of choices or even search for specific information

**trademark** ▶ a name, symbol, or other device identifying a product; it is officially registered with the U.S. government and its use is legally restricted to its owner

**transfer rate** ▶ amount of time it takes to transfer video from a server on the Internet to the user's computer

**transitions** ▶ special effects such as fade in and fade out that can be set to occur between frames in an animation

**treatment** ▶ how the title will be presented to the user, that is the "look and feel" of the title

**TrueDoc** ▶ a text standard supported by Netscape and Bitstream

**TrueType** ▶ default fonts such as Arial and Times New Roman on the Windows-based computers, which are usually installed with the operating system

**tweening** ▶ a process which automatically fills in the in-between frames after you set the beginning position on one frame and its ending position on another frame of an object in a path animation

**typeface** ▶ a type design such as Arial or Helvetica

**unity** ▶ *see* inter-screen unity, intra-screen unity

**usability testing** ▶ a formal testing process in which potential users are filmed as they interact with a title and are asked to verbalize what they are thinking; this type of testing allows the developer to see what users do, why they interact in the way that they do, and what their feelings are as they progress through the title

**vector graphics** ▶ (also called **draw-type** graphics) represent an image as a geometric shape made up of straight lines, ovals, and arcs

**virtual reality (VR)** ▶ an environment that surrounds the user so that he or she becomes part of the experience

**virtual reality modeling language (VRML) ▶**

a computer language used to create 3-D environments on the Web that allow the user to move through a space or explore an object; especially useful in creating games and educational titles; allows the environment to be dynamic and always changing

**vision ▶** broad statement of a company's long-term intentions and goals

**volume ▶** indicated by the height of each peak in a sound wave—the higher the peak the louder the sound

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**warping ▶** a special effect that results in distortion of an image

**wav ▶** an audio file format developed by Microsoft and IBM that has become widely used for audio on the Web

**webcast ▶** a broadcast in real time over the Web

**World Wide Web ▶** part of the Internet that allows delivery of multimedia and provides for hyperlinking of content