



Flash MX 2004 Tutorial: A Quick Tour

What is Flash?

- Macromedia Flash is a multimedia graphics program specially for use on the Web
- Flash enables you to create interactive "movies" on the Web
- Flash uses vector graphics, which means that the graphics can be scaled to any size without losing clarity/quality
- Vector-based content and applications download faster than their bitmap equivalents. Streaming data content appears immediately, without having to wait for the entire piece to download.
- Examples can be found at: <http://members.aol.com/lpang10473/flash.htm>

Who can Create Flash Movies?

To create your own Flash movies you need to buy a Macromedia Flash program such as Flash MX 2004.

You can also download a 30-day trial copy of the Flash product (for building Flash movies) at: <http://www.macromedia.com/downloads/>

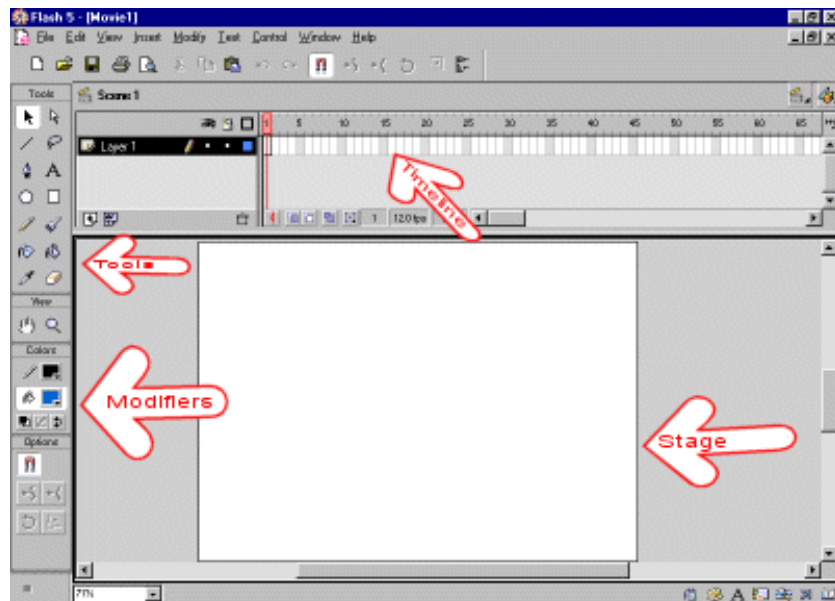
Who can View Flash online?

To view a Flash movie, a Macromedia Flash Player (a plug-in) needs to be loaded on your computer. However, practically all web users have it loaded as part of their browser package.

If you do not have the Flash Player installed you can download it for free from Macromedia's site: <http://www.macromedia.com/downloads/>

Getting Started

To begin, open Flash MX 2004 and you will see the opening window that allows you to *open an existing movie*, *create a new movie*, or *create a movie using a template*. Choose **Create New - Flash Document**. You will see this screen next.



The upper left corner of the screen displays the **Toolbox**, which contains the tools to create or modify graphics and text. Tool modifiers for the selected tool display below the Tool palette. You use modifiers to set tool options.

The **Timeline** appears in the upper portion of the screen. You use the Timeline line to lay out the sequence of the movie.

The **Stage** displays in the center of the screen. You create your movie on the Stage.

At the bottom of the screen are two more windows (also called “panels”) which are not shown in the above picture. First, the **Action panel** where you can enter commands in the form of ActionScript which is similar to JavaScript. Second, the **Properties** (or **Property Inspector**) is the panel where you can change the characteristics of the selected object.

There may be other panels visible. You can collapse or expand any panel by toggling the triangle on its title bar. You can remove a remove (by right-clicking its title bar, and selecting **Close Panel**) and later bring them back through the Windows menu. Panels are dockable.

Example

You start creating your movie by setting the Dimensions, Background Color, Frame Rate, and Ruler Units.

Dimension	The size of the Stage in terms of width and height.
Background Color	The color of the Stage.
Frame Rate	The speed of the movie (usually 12-18 frames per second)
Ruler Units	The unit of measure the ruler displays.























You set these properties in the Properties Inspector (if it is collapsed, click the triangle to open it).

Click the button right of the word **Size**. Ensure that you have the following settings:

Width = **800 px** Height = **400 px** Background color = **White** Frame Rate = **12**

Then click on OK.

Toolbox

Tools			
	Arrow – move/select objects		Subselect arrow– select and modify points on a curve
	Line – draw lines		Lasso – select sections of a drawing
	Pen – draw Bézier curves		Text – create text
	Oval – draw oval and circles		Rectangle – draw rectangles and squares
	Pencil – draw freeform lines		Brush – paint fills
	Free transform – modify object		Fill Transform– modify fills
	Ink bottle – change color of lines		Paint Bucket – fill enclosed shapes with a color
	Dropper – select colors		Eraser – erase objects
			Hand – move a segment on the screen
			Zoom – zoom in or out
	Stroke – set color of the border of an object		
	Fill – set color of the fill of an object		

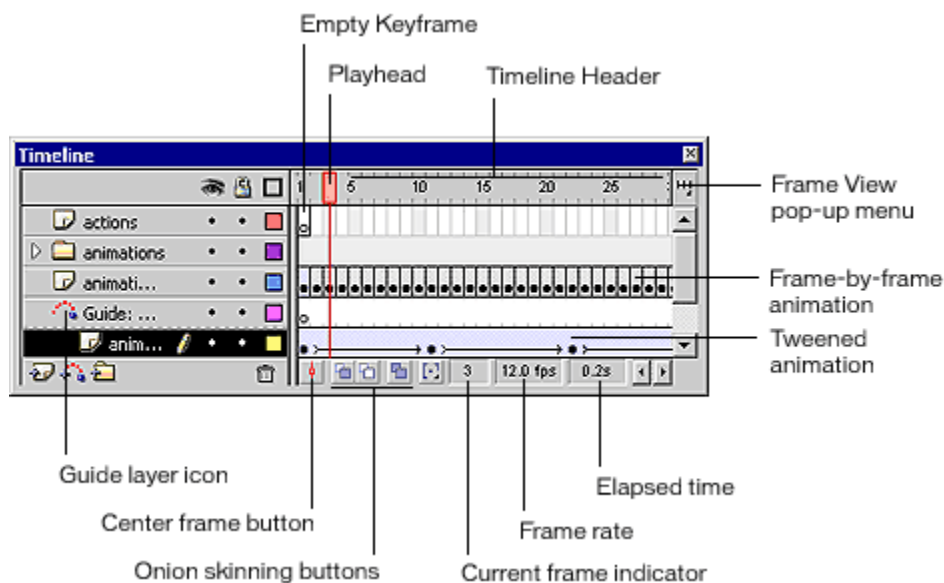
Try out these tools. When done, clear the screen by double-clicking the Eraser.

Throughout your session, don't forget about the Undo function (**Edit, Undo** or **Ctrl-Z.**)

Timeline, Frames and Layers

The Timeline organizes and controls a movie's content over time in frames and layers. Like films, Flash movies divide lengths of time into frames. Each frame represents a different image that appears on the Stage.

Layers in a movie (explained later) are listed in a column on the left side of the Timeline. Frames contained in each layer appear in a row to the right of the layer name. The Timeline header at the top of the Timeline indicates frame numbers. The playhead indicates the current frame displayed on the Stage.



Flash Tweening

Tweening comes from the words "in between". With tweening you can go from one keyframe to another and specify changes in the animation and let the Flash program create the frames in between. (Note: A keyframe specifies changes in an animation. You create keyframes at important points in the Timeline and let Flash create the frames in between.)

Example

In this example you will learn how to make an object move across the screen. The basic steps are:

1. If not at the beginning frame of a movie, create a keyframe.
2. Create the object.
3. Convert the object to a symbol.
4. At a later frame, insert a keyframe.
5. Modify the object.
6. Create a Movie Tween between the initial and ending frames.

Step 1

Create a new movie by selecting **File, New**.

Add a small circle on the left side of the Stage area -- do this by selecting the oval tool from the left toolbar. Choose a fill color in the Modifiers section of the Toolbox.

While pressing the **Shift** key, draw the circle in the Stage area (If you don't press the Shift key, it will be an oval).

Step 2

Select the Arrow tool from the left toolbar (or hit the letter "**V**"). Double-click on the circle to select the whole object (it must be shaded).

Step 3

Now we have to convert the circle to a symbol.

Note: Symbols are reusable elements that you use with a document. Symbols can include graphics, buttons, video clips, sound files, or fonts. When you create a symbol, the symbol is stored in the **library** (access it by going to **Window, Library**). When you place a symbol on the Stage, you create an instance of that symbol.

Symbols reduce file size because, regardless of how many instances of a symbol you create, Flash stores the symbol in the file only once. It is a good idea to use symbols, animated or otherwise, for every element that appears more than once in a document. You can modify the properties of an instance without affecting the master symbol, and you can edit the master symbol to change all instances.

Right-click the ball object and chose **Convert to Symbol**. Name the symbol "Ball", select Behavior as **Graphic** and select **OK**.

You can check if the object made it to the Library by selecting **Window, Library** or hitting Ctrl-L.

Step 4

Go to Frame 20 in the Timeline. Do this by clicking the gray field below 20. Then **right click** in this field. Choose **Insert Keyframe**. Keyframes appear as circles in a frame. This operation duplicates the previous image in the current frame.

***Note:** A keyframe is a frame where you define changes in the animation. When you create frame-by-frame animation, every frame is a keyframe. In tweened animation, you define keyframes at significant points in the animation and let Flash create the contents of frames in between. Flash displays the interpolated frames of a tweened animation as light-blue or light-green with an arrow drawn between keyframes. Because Flash documents save the shapes in each keyframe, you should create keyframes only at those points in the artwork where something changes.*

Keyframes are indicated in the Timeline: a keyframe with content on it is represented by a solid circle, and an empty keyframe is represented by an empty circle before the frame. Subsequent frames that you add to the same layer will have the same content as the keyframe.

Step 5

Using the Arrow tool, select the circle and move it to the right side of the stage.

With the circle still selected, click the **Free Transform Tool** and resize the circle to make it larger. To maintain proportionality, use the Shift-key while dragging a corner.

From the Property Inspector, select the **Color** dropdown list box and make the following changes:

Brightness = **70%**

Tint = Pick a new color off the palette

Step 6

Click on the Timeline any place between Frame 1 and Frame 20. Then right click and choose **Create Motion Tween**. Note the solid arrow on the Timeline.

Step 7

Choose **Control, Test Movie** from the top menu to test your Flash movie. (You can also use **Ctrl-Enter**). When done reviewing the test, close the Document Window to return (pick the lower x in the upper right hand corner of the Window).

Layers

Every Flash movie consists of one or more layers. A layer represents a level of content that can sit on top or below another layer. Think of it as a sheet of clear acetate. You can use it to organize your movie – one layer for text, one for background graphics, another for foreground objects and another for sound.

By having layers you prevent objects from conflicting with each other. Also, you can hide layers so you can easily work on specific graphics. You can lock layers to avoid content being inadvertently edited.

Example

In this example, we will rename a layer, add a layer, then add text to our movie (have the word “Strike” on the bowling ball at the end of the clip).

Step 1

Go to the Timeline and change the name of the layer from “**Layer 1**” to “**Ball Motion.**” To make this change, double-click the current layer name, typeover the new name, and hit Enter.

Add a new layer by clicking the **Insert Layer** icon on the lower left hand side of the panel. A new layer will appear over the original one. Name the layer “**Text.**”

Step 2

Click the last frame of the new layer. Right-click it and select **Insert Keyframe**.

Step 3

Select the text tool and choose the following settings:

Static Text

Font = **Arial**

Font Size = **30**

Color = Select a color that contrast well against the color of the ball

On the circle, click it and release then type in the placeholder: **Strike!** Click the arrow tool.

Step 4

Test your Flash movie by selecting **Ctrl-Enter**.

Sound

In this example, we will add sound effects to our movie.

Step 1

Go to the Timeline and add another layer by clicking the **Insert Layer** icon. Name the layer "**Sound Effects.**"

Step 2

From the menu, select **File, Import, Import to Library**. Locate a sound file such as: bowling.wav. Click **Open**.

Step 3

Open the Library by selecting **Window, Library** (or use **Ctrl-L**). You should see the sound file with its waveform displayed in the small window. You might want to preview your sound here by clicking on the Play button.

Note: The library in a Flash document stores symbols created in Flash, plus imported files such as video clips, sound clips, bitmaps, and imported vector artwork. The Library panel displays a scroll list with the names of all items in the library, allowing you to view and organize these elements as you work. An icon next to an item's name in the Library panel indicates the item's file type.

Objects in the library are reusable so you can use the same symbol multiple times in a movie. You can also open the library of any other Flash movie while you are working in Flash, to make the library items from that file available for the current movie.

Step 4

Click the first frame of the new layer. Drag the sound file from the library to the Stage (*not the timeline*). Its waveform should appear in the Timeline.

Step 5

Test the movie (**Ctrl-Enter**). *You may have to insert frames to synchronize the movie with the sound effect. Back in the Timeline, highlight frames across the layers, right-click, and select **Insert Frames**.*

Action

In this example, we will add an Action that will stop the movie from playing.

Step 1

Go to the Timeline and add another layer by clicking the **Insert Layer** icon. Name the layer “Action Settings.”

Step 2

Right-click the last frame of the new layer. Insert a new keyframe.

Below the Stage, locate the Actions panel. (Open it if necessary)

Note: ActionScript, the scripting language of Flash, lets you add interactivity to a movie. ActionScript provides elements, such as actions, operators, and objects, that you put together in scripts that tell your movie what to do; you set up your movie so that events, such as button clicks and keypresses, trigger these scripts. For example, you can use ActionScript to create navigation buttons for your movie.

In Flash, you use the Actions panel to write scripts with ActionScript. Using the panel in normal editing mode, you build scripts by choosing options from menus and lists. Using the panel in expert editing mode, you enter text directly into the Script pane. In both modes, code hints help you complete actions and insert properties and events. Once you have a script, you can attach it to a button, movie clip, or frame to create the interactivity you need.

Step 3

Open **Global Functions, Timeline Control** and double-click the **stop icon**. Note that Flash automatically entered the script code for you. On the Timeline, you should see the letter “a” in script in the appropriate frame.

Step 4

Test your movie (**Ctrl-Enter**).

Saving the File and Viewing the Flash Movie on the Web

Step 1

After creating a Flash movie you choose **File, Save As** from the top menu to save your movie. Save the file as: "myflash fla" – note the file’s folder location.)

Note: Flash documents, which have the .fla filename extension, contain all the information required to develop, design, and test interactive content. Flash documents are not the movies the Flash Player displays. Instead, you publish your FLA documents as Flash movies, which have the .swf filename extension and contain only the information needed to display the movie.

Step 2

Choose **File, Publish**.

Note: This will create an .swf file (“myflash.swf”) which is a compiled (un-editable) version of your .fla working file. Also, it will create an HTML file (“myflash.html”) where you can view your movie as a web page.

Note how small swf files are. Because of its compact size, it is relatively fast to download these movies and render them on web pages.

Step 3

Go into your browser and select **File, Open**. Click the **Browse** button and locate the HTML document (e.g. “myflash.html”) that Flash created. It is found in the same directory as your .fla file. Click **Open** then **OK**. Watch and enjoy your Flash movie. If you have a web page, you can include a hyperlink to the HTML file containing the movie (e.g. “myflash.html”).

Supplemental Information

Viewing the Flash Movie in PowerPoint

Step 1

Before you start, you will need to know the **exact** location of your Flash movie such as "C:\Documents and Settings\irmcstudent\My Documents\Powerpnt\myflash.swf".

Open Powerpoint and right-click a blank area on the top menu bar. Select the "**Control Toolbox**". At the bottom of the Control toolbox, click on the icon for "other" controls which appears like a little hammer.

Step 2

Select "Shockwave Flash Object" from this menu. Don't select any other "Flash" or "Shockwave" related components on your machine.

Your cursor will change to crosshairs. Drag these crosshairs to form the box in which you would like your movie to appear. This can be full-screen or a portion of the screen.

Step 3

Get properties on the box you have just created by right-clicking on the box and selecting "Properties." At the top of this code box is a line entitled "Custom." Click on this line and then select the "... " button at the end of the line.

Step 4

In the dialog box, hard code the exact location of your movie into the "Movie URL" box. Check the "Embed Movie" box so that no matter where the presentation goes, the movie will remain with it in one PowerPoint presentation file.

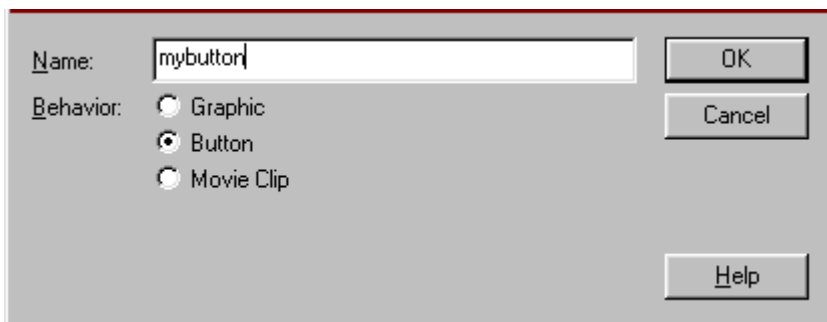
Step 5

Save and run your slide show in presentation view. Sometimes the object box will not show the movie (refresh) until you have done this. Once you run the show, your movie should pop-up in the slide you've just created.

How to Create Simple Buttons

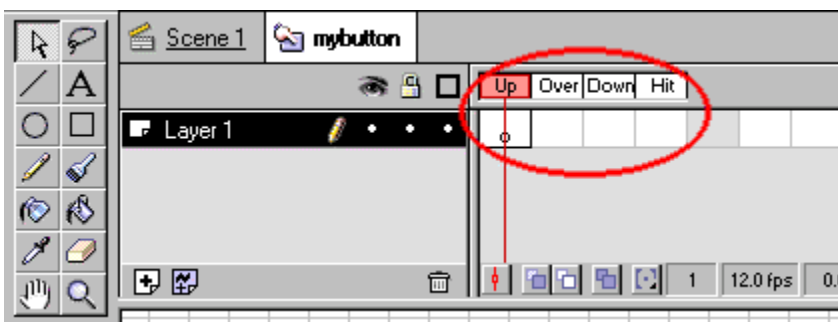
Creating a button that changes upon mouse events is simple. Merely tell Flash how you want the button to look 1) in normal state, 2) when the mouse moves over the button (mouseover) and 3) when the user clicks the button (mousedown).

1. Add a new layer named "Button."
2. Choose **Insert, New Symbol** (or press Ctrl-F8) and the Create New Symbol window appears.



Add a name for your button (such as "mybutton") and be sure the Button option is selected.

3. Click **OK** and the Button Object Editor opens. Note that there are only four frames in the timeline.



4. Draw a button the way you want it to be when no mouse event is detected. Notice that the active frame is labeled "Up" in the timeline.

5. Insert a keyframe in the frame labeled "Over" in the timeline. To do this, right-click on Layer 1 in the white cell below where it says "Over" then choose "Insert Keyframe".

Draw a button the way you want it to be when a mouseover event is detected.

6. Insert a keyframe in the frame labeled "Down" in the timeline.

Draw a button for when a mouseclick event is detected.

You've created a button with three looks that will change upon mouse events. Next you will specify which area should be clickable as well as what should happen when the button is clicked.

Defining the Clickable Area

The last frame, labeled "Hit", is unique. It is simply used to specify the area that triggers mouse events. If you leave this frame blank then mouse events will be triggered when the mouse moves over the visible button.

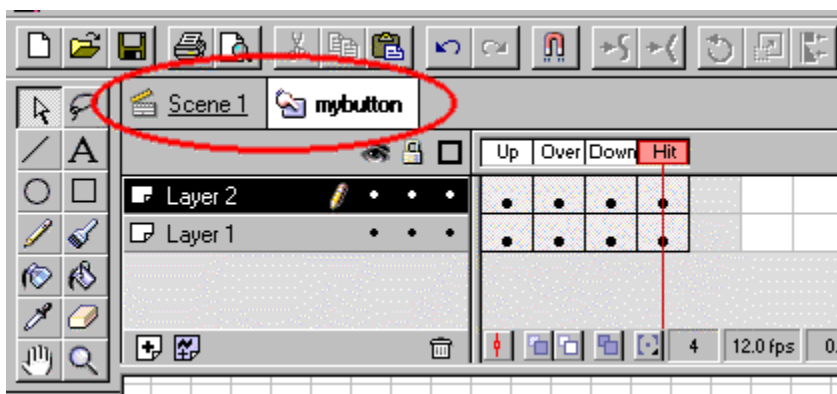
If you want to change the default hit area, follow these steps:

1. Insert a keyframe in the frame labeled "Hit" in the timeline.
2. The hit area of your object will be shaded. If you want another area, use one of tools to redefine the area such as the oval, rectangle, or pencil tool.

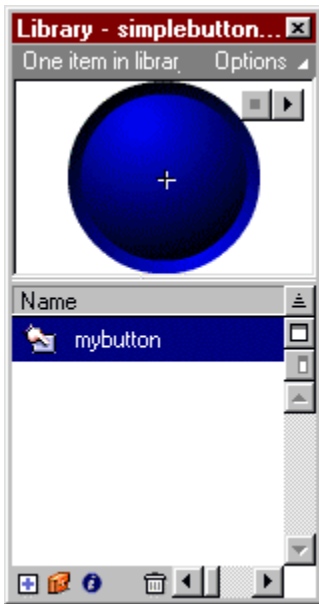
Note: If you draw an area that is bigger than the button then the mouse event will occur as soon as the mouse gets even close to the button. On the contrary you can draw an area that is smaller than the button, so that mouse events are only triggered when the mouse is at the center of your button.

Adding Actions to the Button

The button we created so far is still in the Button Object Editor. We still haven't dragged it onto our main movie. If you look above the timeline you see two icons labeled "Scene 1" and "mybutton".



1. Click the "Scene 1" icon to return to the main movie.
2. Click the frame where you want the button to appear then insert a keyframe.
3. Click on the button in the Library window and drag it onto the movie. If your Library is not visible, choose **Window >Library** (or press Ctrl-L) to make it visible.



4. Once the button has been placed correctly in your movie, make sure that it is selected (for example, there is a rectangle around a circle and/or it has a crosshair on it). Drag the button to the Stage.
5. Open the "Actions" panel. Want the button to go back to the beginning when clicked.

Click **Global Functions, Movie Clip Control** Icon to expand the list and double click the "On" icon. Double-click "**Release**".

We have told Flash that it should react on a mouse-click release event but we still haven't told what should happen when the event is detected.

We want to jump to another frame, namely Frame 1 in Scene 1.

Place the cursor after the curly bracket: {

Select **Global Function, Timeline Control, gotoAndPlay**.

We need to specify the scene and frame you want to jump to. Insert:

“Scene 1”, 1

between the pair of parentheses.

The final code should look like this:

on (release) {gotoAndPlay(“Scene 1”, 1); }

Don’t worry if the last curly bracket is on another line.

(Note: When you add or remove frames, the frame numbering may change. You might want to permanently label the destination frame using the “Frame Label” property in the Property Inspector and refer to this label in the code instead of frame number.)

Test the Movie

Select **Ctrl-Enter**. Save and publish the file as needed.

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