

Movie clip symbols

Movie clips are the most complex and useful type of symbol. They are really mini-movies, with timelines of their own, which play inside the main *Timeline*.

They also have the added benefit of being able to be scripted using *ActionScript*.

Everything that you do in the main *Timeline*, you can do inside a *Movie clip* too. *Movie clips* allow you to build animations within animations—for example, a shape tween playing inside a motion tween (perhaps a cloud changing shape as it travels across the sky).

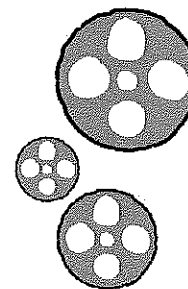
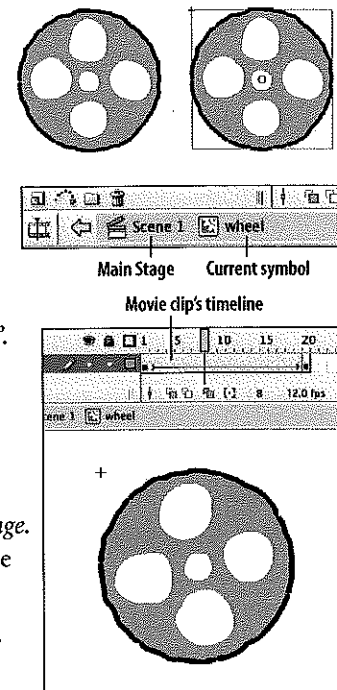
To make a simple animated Movie clip

In a new Flash file, make a rotating wheel.

- 1 Draw a circle on the *Stage*, and punch some holes in it with the eraser tool . This extra detail makes it easier to see the circle rotate (see right).
- 2 Select the object and choose *Modify > Convert to Symbol...*, make this into a *Movie clip* symbol and call it 'wheel'. The graphic will have a light blue box (see far right).
- 3 Double-click the symbol to move into symbol-editing mode. The *Timeline* you see is now the *Movie clip Timeline*, not the main *Timeline*. You can see this by looking at the *Scene Menu* (see right).
- 4 You are going to apply a motion tween **inside** this *Movie clip*. Select the graphic in frame 1 and convert it to a *Graphic* symbol. Call it 'wheel_graphic'.
- 5 Press *F6* at frame 20 to create a duplicate keyframe.
- 6 Click back in frame 1 and set a *Motion* tween. Set the rotation to be *CW* (clockwise) and make it rotate once.
- 7 Go back to the main *Stage* by clicking on *Scene 1* (see far right). From the *Library*, drag and drop two more instances of this *Movie clip* on the main *Stage*. Scale these with the *Free Transform* tool so they are slightly different sizes (see below right).
- 8 Test the movie now. Note that the main *Timeline* is still only one frame long, but three other twenty-frame animations play continuously within that one frame.
- 9 You'll see that the wheel 'stutters' as it encounters frame 20 and then frame 1, which have exactly the same graphic on them. To fix this, edit your 'wheel' symbol by adding a keyframe at frame 19, then deleting frame 20 completely (shortcut: *Shift-F5*).

Any edit that you make to the graphic symbol called 'wheel_graphic' will be applied to the *Movie clip* symbol called 'wheel' and to every instance of 'wheel' on the *Stage*.

Note: This movie won't play in Flash authoring mode. To preview it press *⌘/Ctrl-Enter*.



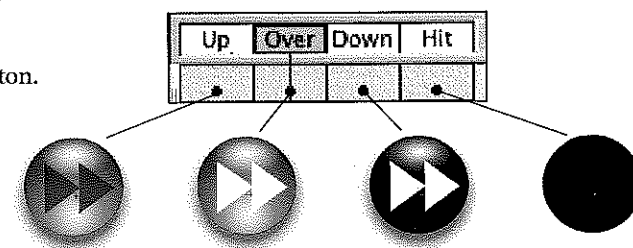
Button symbols

A button is a type of symbol that can have some simple reaction to user interaction. *ActionScript* is added to make the button to start or stop the movie, or do some other useful job. Buttons have a four-frame *Timeline* separate from the main movie's *Timeline*.

The four button frames—or states—are:

- **Up**—whenever the mouse is not over the button.
- **Over**—when the mouse is over the button.
- **Down**—when the button is clicked.
- **Hit**—the clickable area of the button.

You only ever see the first three frames, *Up*, *Over* and *Down*. The *Hit* frame tells Flash which parts of the button graphic are active.

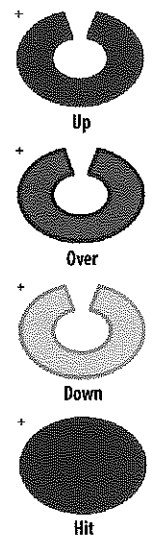


To make a simple button

- 1 Draw a shape on a new *Stage*, select it and choose *Modify > Convert to Symbol...*
- 2 Enter any name and choose *Button* as the behaviour.
- 3 Double-click the button to edit the symbol. You could also double-click it in the *Library* window to edit it.
- 4 Press *F6* three times to create duplicate frames for the *Over*, *Down* and *Hit* states.
- 5 Click inside the *Over* frame and change the colour or shape of the graphic. Repeat for the *Down* frame.
- 6 The *Hit* frame only needs to be changed if your button is an irregular shape. Flash will look for any block of solid colour as the *Hit* state (active area).

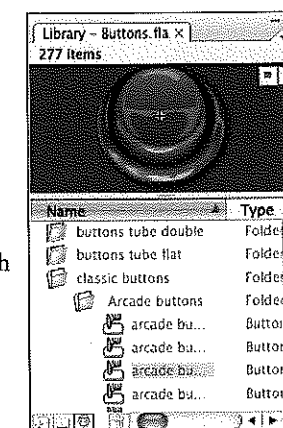
Go back to the main scene and test the button by previewing your movie.

Buttons are most useful when actions (small pieces of code) are applied to control them. This will be covered in chapter 4, *ActionScripting*.



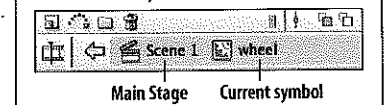
Common Libraries

Flash provides some pre-made *Buttons* inside *Common Libraries*. This library can help you get started and show you how sophisticated some button graphics can become. To see them, choose *Window > Common Libraries > Buttons*. If you want to use one of these pre-built buttons, at this beginning stage, only use the ones with regular button icons .



tip Working in the wrong mode?

Keep an eye on the *Scene Menu* to check you are in the right mode—on the *Stage* for normal work, and in symbol-editing mode when editing *Graphic*, *Movie clip* and *Button* symbols.

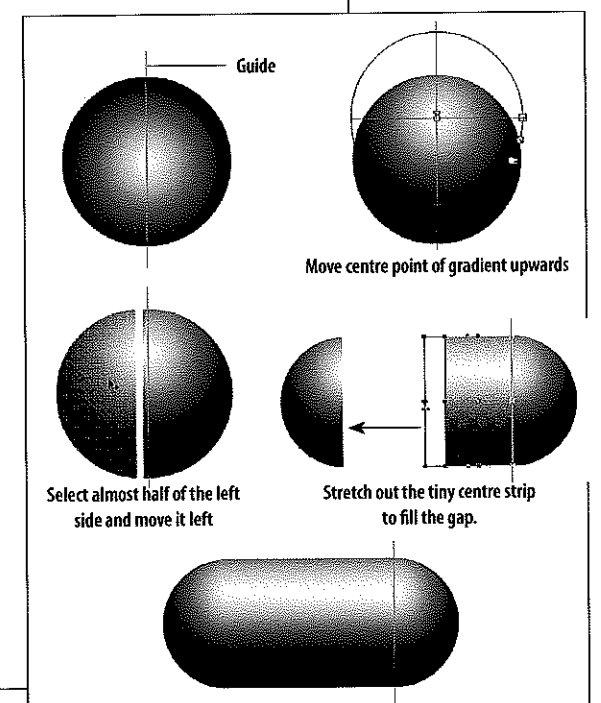


exercise 2.5

Pill buttons

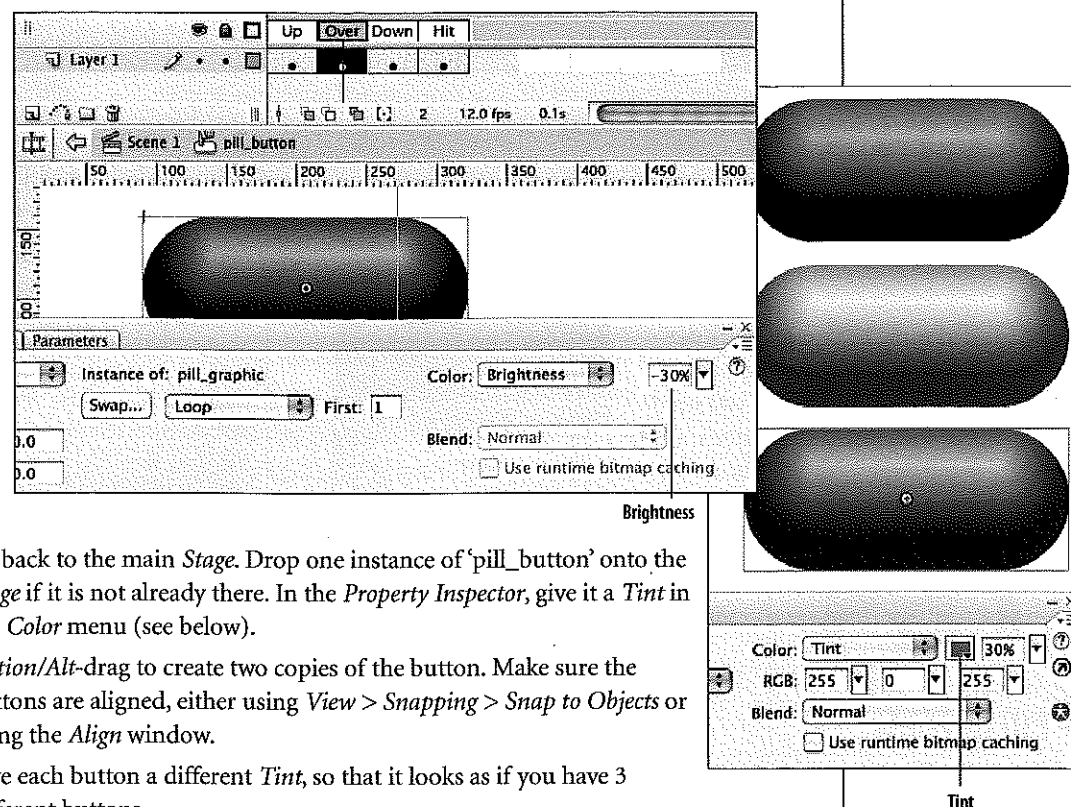
In this exercise, you will create some pill shaped buttons.

- 1 In a new document, choose *View > Rulers* and then drag from the left ruler to place a vertical guide on the *Stage* (see right).
- 2 Draw a circle with no outline and a radial greyscale fill. When you draw it, hold down the *Option/Alt* key and drag out from guide line. This will draw the circle from the centre (see right).
- 3 With the circle selected, use the *Gradient Transformation* tool to position the centre of the gradient higher, but still centred on the guideline (see top far right).
- 4 Select **almost** half of the left side of the circle (see right) and hold down the *Shift* key while moving it left with the arrow keys on the keyboard. This will make sure that it stays fixed horizontally.
- 5 Select a very small vertical slice from the remaining piece and using the *Free Transform Fill* tool drag the centre handle on the left hand side to stretch the piece to fill the gap (see above far right).



Pill buttons cont...

- Select the whole graphic and convert it to a *Graphic* symbol.
- Choose *Modify > Convert to Symbol* again but this time choose the *Button* option. Call this symbol 'pill_button'.
- Double-click on the 'pill_button' symbol to enter symbol editing mode and create a keyframe for each button state.
- In the *Over* frame, select the instance of 'pill_graphic' and adjust its *Color* settings in the *Property Inspector*. Set *Color* to *Brightness* and make the value -30% (see below). Choose your own *Brightness* setting for the *Down* state.



- Go back to the main *Stage*. Drop one instance of 'pill_button' onto the *Stage* if it is not already there. In the *Property Inspector*, give it a *Tint* in the *Color* menu (see below).
- Option/Alt*-drag to create two copies of the button. Make sure the buttons are aligned, either using *View > Snapping > Snap to Objects* or using the *Align* window.
- Give each button a different *Tint*, so that it looks as if you have 3 different buttons.

Exercise extension: Edit the 'pill_graphic' symbol now to add some sophistication. For example, you may wish to add extra highlights, a drop shadow and an outline. Look at *Window > Common Libraries > Buttons* for ideas.

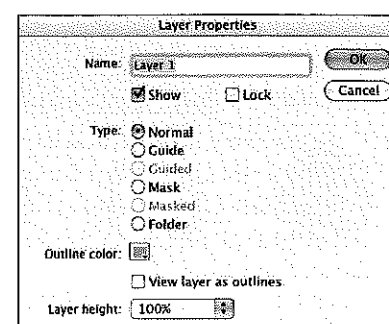
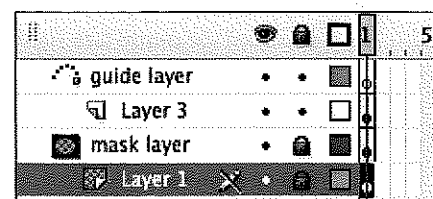
Layer effects

There are two different layer effects. These effects are applied directly to the layers to produce:

- Mask layers**—which hide and show other layers below.
- Guide layers**—which guide motion tweens on other layers.

Layer properties

To look at or set the properties for a layer, double-click the layer icon to the left of the layer name. The *Layer Properties* dialog box pops up (see right). Here you can set the *Type*.



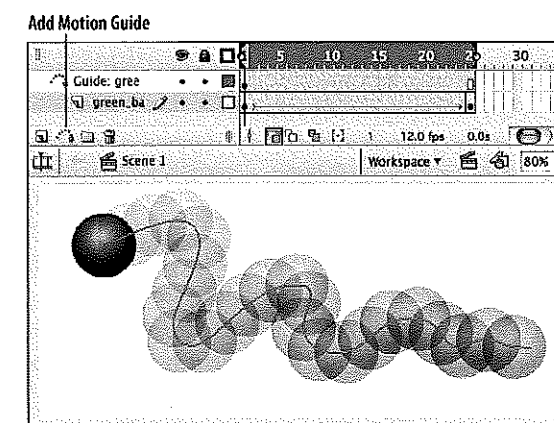
Motion guide layers

Motion Guide layers let you draw paths that motion-tweened symbols can be animated along. The path is drawn in the *Motion Guide* layer, then motion tweens in the layer below can follow the path.

To create motion on a path

In a new file:

- Draw a ball and convert it into a *Graphic* symbol.
- Add a keyframe at frame 25 and motion frame 1.
- Create a new *Guide* layer by clicking this symbol in the layers area. You will see the *Motion Guide* layer appear and the layer containing the graphic indent underneath it. An indented layer is affected by the *Motion Guide*.
- Set the *Pencil* tool to a bright pink thin stroke. In the *Pencil tool Options*, set the stroke to 'smooth'. In one motion, draw a wavy line across the screen. This is the motion guide. It will be invisible in the final movie.
- In frame 1, move the symbol so that its small empty circular point is at the beginning of the pink line.
- In frame 24, repeat but move the *Graphic* symbol to the end of the line.
- Turn on *Onion Skinning* (see above) or run the *Playhead* along the *Timeline* to see if the guide layer is working.



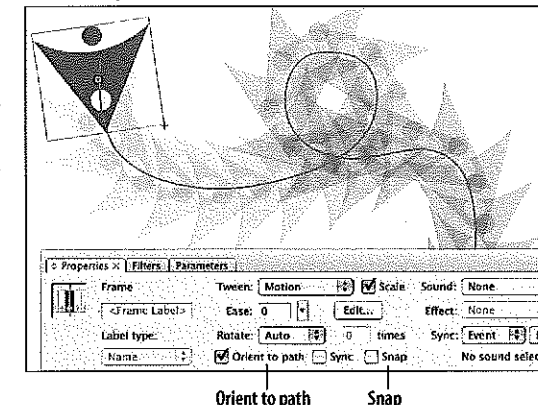
tip Pink guides?

Use bright pink because it is easiest to see, and you are less likely to have pink graphics to confuse it with. This is a good Flash habit to get into.

To create oriented motion on a path

This *Motion Guide* technique is really useful for guiding shapes which have a front end and a back end, for example; planes, cars, arrows, birds, triangles.

- Create a new file and in it create a motion tweened graphic and a *Motion Guide* layer, just as you did above, but this time use a graphic which has a front and a back.
- Once your graphic is successfully following the *Motion Guide*, select the start of the tween and switch on *Orient to path* in the *Properties* window (see right).
- You will also need to make sure, at the start and end of the tween, that your shape is pointing in the direction of where it's going to go (so that Flash knows which is the front!).



Troubleshooting Motion Guides

If the animation does not follow the path (and it often doesn't), check the following:

- The graphic symbol should 'snap' to the path. Move the graphic symbol slightly, the empty circle visible in the centre of the symbol should be over the guide line. Turning on the *Snap* option at the start of the tween (see above) may help.
- The *Guide* layer should have one unbroken line on it. If you have drawn your guide in two or more stages, Flash might see this as two separate guides.
- The *Guide* layer should not have a tween. It is the layer below that is tweened.
- The icon for the layer below should be indented slightly, showing it is controlled by the motion *Guide* layer above.
- If your tween is set to *Orient to path*, make sure that both the starting and ending instances are pointing in the 'right direction'.

Mask layers

A *Mask* layer is a hole through which underneath layers are visible. The masked area is the 'window' through which other layers can be seen.

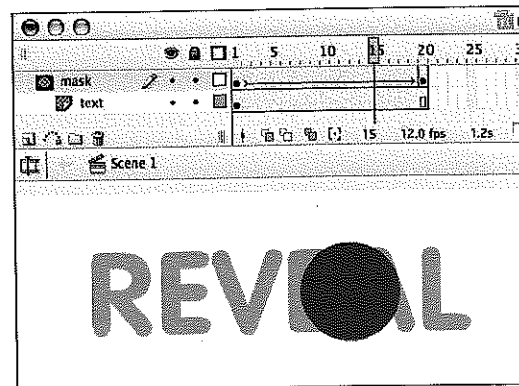
To create a Mask layer

- 1 Create a new file.
- 2 Using regular *Static Text*, write a word of your choosing (see below). This will be 'revealed' by the mask.
- 3 Make a new layer in the normal way.
- 4 On it, create a bright blue circle and turn that circle into a *Graphic* or *Movie clip* symbol.
- 5 Motion tween the circle across the word over a duration of about 25 frames (see right).
- 6 Right-click the icon for the 'mask' layer and set its type to be a *Mask* layer. Both the *Mask* layer and the *Masked* layer will be locked. This allows you to see the mask in action. If you need to edit either of those layers, just unlock them. They will always appear properly in your final movie, even if they are unlocked.
- 7 Preview your movie to see the final effect.



Blue masks?

Another good Flash habit is to create bright blue masks. Like the motion guides, these are never seen in the final movie. It helps to have some colour coding like this when movies get complex.



Limitations and multiple layers

You can add more layers under a *Mask* or *Guide* layer to create sophisticated effects. Make sure the layers are directly underneath each other and their type is set to *Masked* or *Guided*.

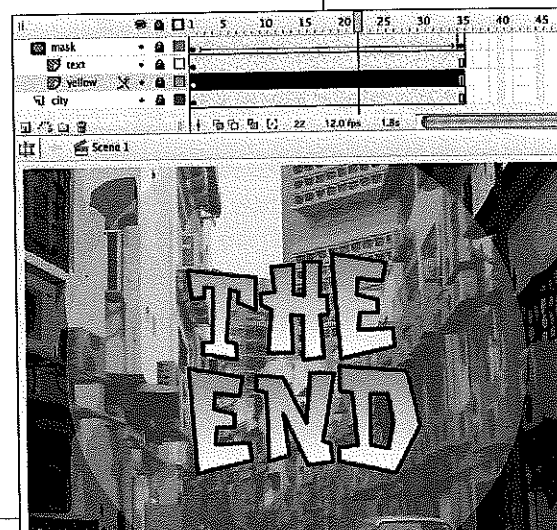
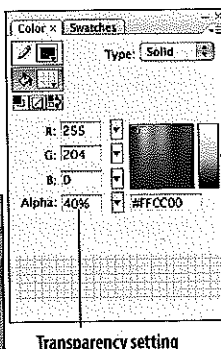
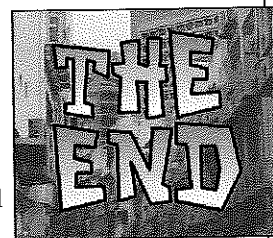
You cannot have a *Guide* layer that is also a *Mask* layer, or a layer that is controlled by both a *Guide* layer and a *Mask* layer. It is not possible to create a mask that follows a path.

exercise
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End frame

You will now create an end frame suitable for an animation using a mask:

- 1 Some graphics have been provided for you. Open the file called "end_frame fla".
- 2 Create a new layer and on it, draw a rectangle which covers the *Stage*, but which is filled with only 40% of any solid colour. Use the *Color* window to set this semi-transparency (see far right).
- 3 Make another new layer and on it, create some *Static Text* which says "The End" or something similar (see right). Add any effects or fills to the text as you like.
- 4 Create one more new layer and in it, create a blue circle in the centre of the movie. It doesn't matter how big it is.
- 5 Convert this circle into a *Graphic* or *Movie clip* symbol.
- 6 Motion tween this symbol so that it starts very small (almost invisible) and over the duration of the scene, enlarges so that it covers the entire movie (see right).
- 7 Finally, make this layer into a *Mask* layer, and make sure that it is masking the two layers below it. To make the mask affect the semi-transparent colour layer as well, drag it up and right slightly so that it indents underneath the *Mask* layer (see right).



Creating scenes

Scenes are an easy way to set up separate sections of a Flash animation. Scenes play automatically in the order that they sit in the *Scene* panel.

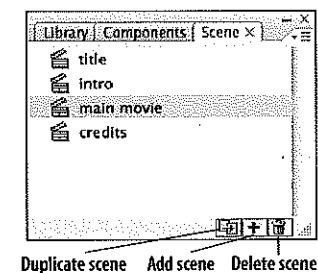
When to use scenes

Use scenes when your *Timeline* is getting too busy—too many layers, or too many frames. Scenes should **only** be used when you are making a linear animation, never for scripted, interactive movies. The only exception to that rule is when you are making preloaders (which will be explained in further detail in the ActionScripting chapter).

Naming and ordering scenes

The *Scene* window is where you can rename, reorder, add and delete scenes. Open it by using *Window > Other Panels > Scene* (see right).

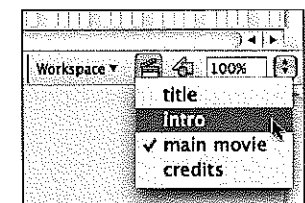
- To **add** a scene, click the *Add scene* button.
- To **delete** a scene, click *Delete scene*.
- To **rename** a scene, double-click the scene name and enter a new name.
- To **duplicate** a scene, click *Duplicate scene*.
- To **change the order** of a scene in the movie, drag the scene up or down the list.



Editing and previewing scenes

Quickly jump from one scene to another with the *Scene* drop-down menu in the top right of the *Stage* (see right).

When you test a movie with **⌘/Ctrl-Enter**, all scenes play. To play only the current scene, press **⌘/Option-Return/Ctrl-Alt-Enter**.



exercise
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'3,2,1, action...'

- 1 Open up any movie you have created.
- 2 Create a new *Scene* and call it 'countdown'.
- 3 Make a frame-by-frame animation in this new scene. It should show the numbers counting down, '5', '4', '3' and so on down to zero.
- 4 Arrange the scenes in the *Scene* panel so that this new scene plays first.

Exercise extension: Add some graphics behind the numbers for a more visually interesting countdown effect.

