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MULTIMEDIA & LEARNING SERVICES

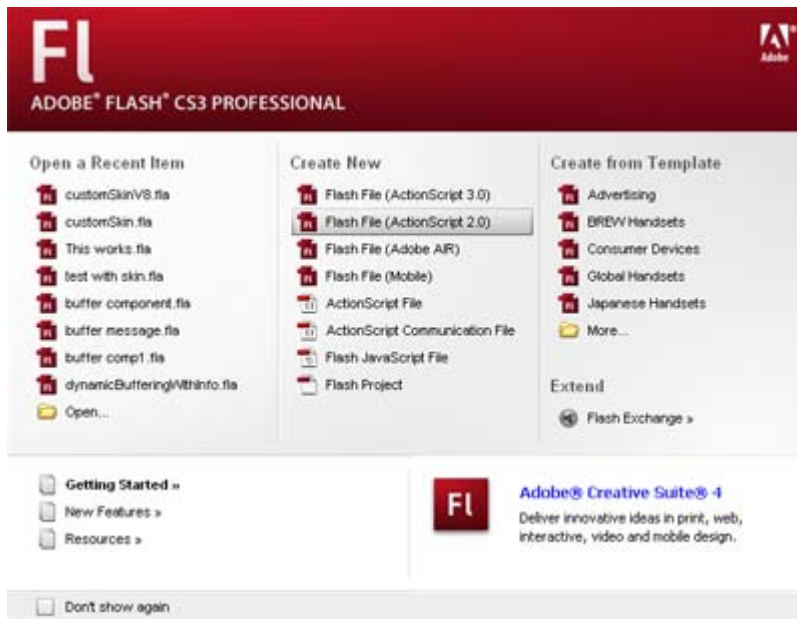
INTRODUCTION TO ADOBE FLASH CS3

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Introduction to Flash

Starting Your Project

On the start up screen, from the Create New menu, choose ActionScript 2.0. ActionScript 3.0 is the latest programming language but currently there are relatively few tutorials available for this, so it is best to use AS2 for now. Once your project is open, save your file.



Creating Simple Motions

This section looks at moving objects across the screen, including creating the objects, inserting into the movie, adding keyframes and tweening the motion.

Creating Objects

When creating Flash movies it is good practice to store your objects in the library, not to draw them directly on to the movie background.

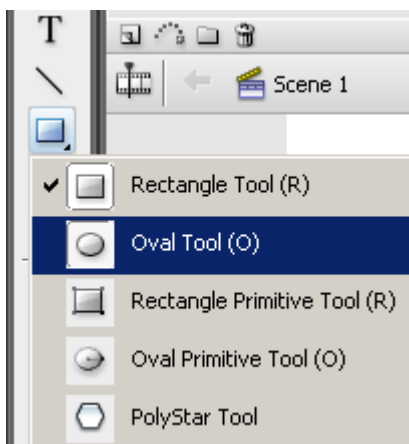
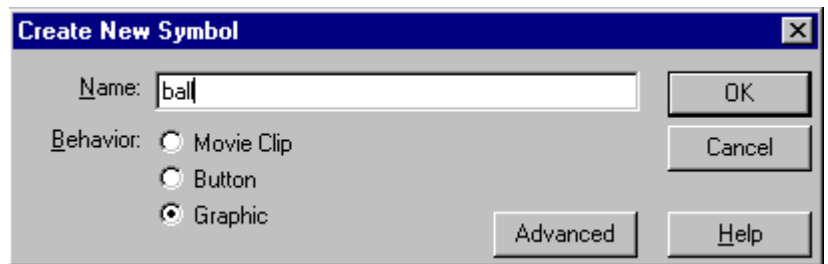
First ensure your library window is open by going to the **Window** drop-down menu and selecting **Library**. Objects can be imported or created in the library. For this exercise we are going to create objects.



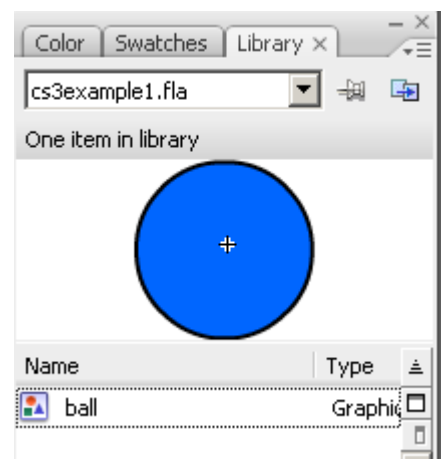
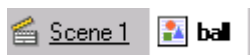
To create a new object, press the small + sign in the bottom left hand corner of the Library window. You will then have three options:

- **Movie**
- **Button**
- **Graphic**

For this exercise select **Graphic**. Name your graphic 'ball'.

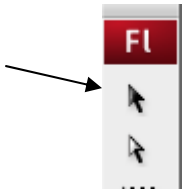


Select the oval tool from toolbar on the left and draw a small circle in the centre of your screen (around the cross, or registration point). Your graphic has now been created. You then need to **go back to your movie** by selecting **Scene 1** from the top left of the screen.



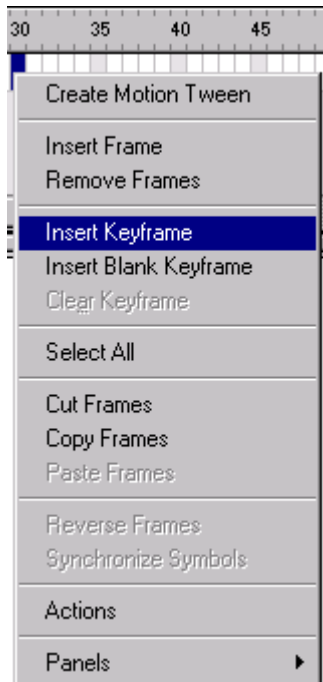
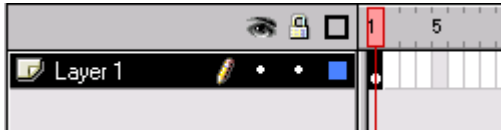
You should now see your graphic in the upper window of the library. Drag and drop this on to your movie window in the bottom left corner.

Creating the Motion



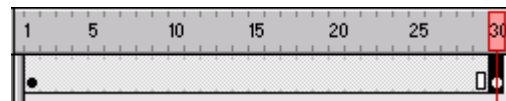
Make sure you switch back to your pointer tool on the Tools toolbar before you start manipulating your graphic in the movie.

The graphic is now added to **Frame 1** in **Layer 1** of your movie (more about layers later)



You now need to add more frames. The default is 12 frames per second, so if the movie is spread over 30 frames this is approximately 2.5 seconds. To increase the number of frames, right-click on frame number 30 and select **Insert Keyframe** from the pop-up menu.

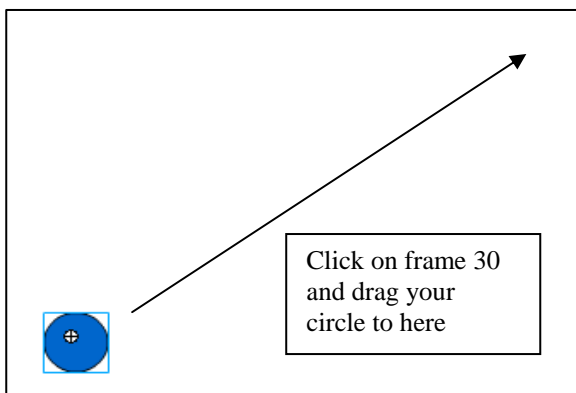
The first keyframe will then be spread over 29 frames and a new keyframe will be in 30.



With frame 30 selected, drag your object to the top right of the movie window. This is the new position. To get your object to move smoothly to the new position, right click anywhere in the grey area (frames 1- 29) and select

Create Motion Tween from the pop-up menu.

Frames 1 – 29 should then turn purple and an arrow will appear. To test the motion, go to the **Control** drop-down menu and select **Play**. You can also see how the movie would look on the Internet by using the **Test Movie** feature.



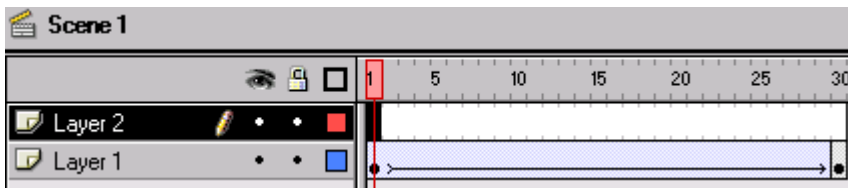
Other effects include scale, rotate and fade. You can experiment with these by selecting frame 30 of your object and then right clicking on your object. You will see the options in the pop-up menu.

Adding Layers

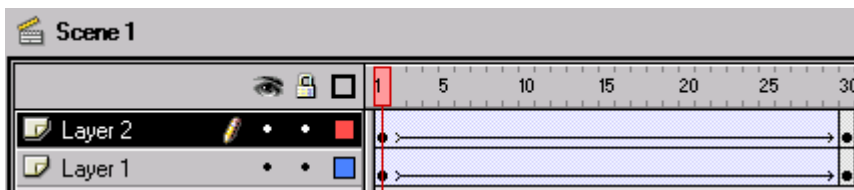
When you are inserting more than one object it is sometimes appropriate to use separate layers. For example if you want two objects moving at the same time.

Go back to the section on creating objects and create a square in your library using the **Tools** toolbar. Call the object 'square'.

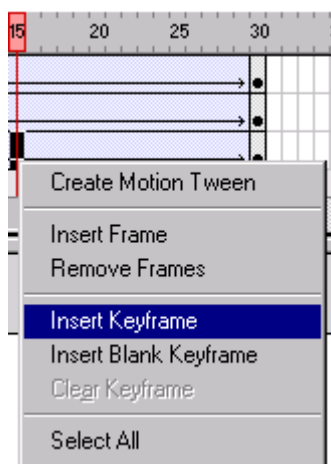
This object will be placed in a different layer. Go back to **scene 1** of the movie and insert a new layer using the **Insert** drop-down menu. Click on frame 1 of layer 2 and drag and drop your square on to the movie window in the bottom right corner.



Next click on frame 30 and insert a keyframe. Place the object in the new position in frame 30 and create the motion tween (see previous section). You should now have two objects moving simultaneously in your movie.

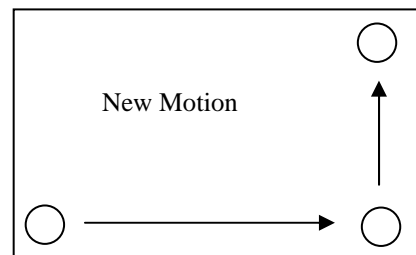


More Complex Motion

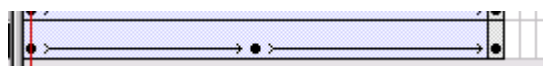


You can also create more complex motions by inserting keyframes at any point in your motion tween and repositioning your object. For example, if you use your ball, which moves diagonally across the screen from the bottom left, you could insert a keyframe in frame 15 and move the ball to the bottom right. The tween will recalculate and now move your ball to the bottom right and then to the end position in the top right.

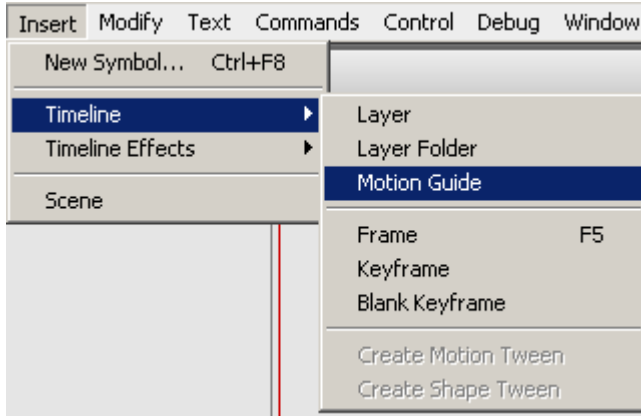
Using this technique you can create motion to different positions on the screen. To achieve motion such as an arc it is better to use a motion guide



(next section)



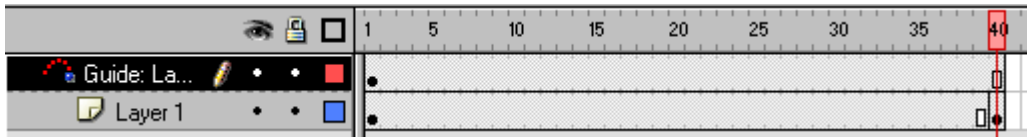
Motion Guides



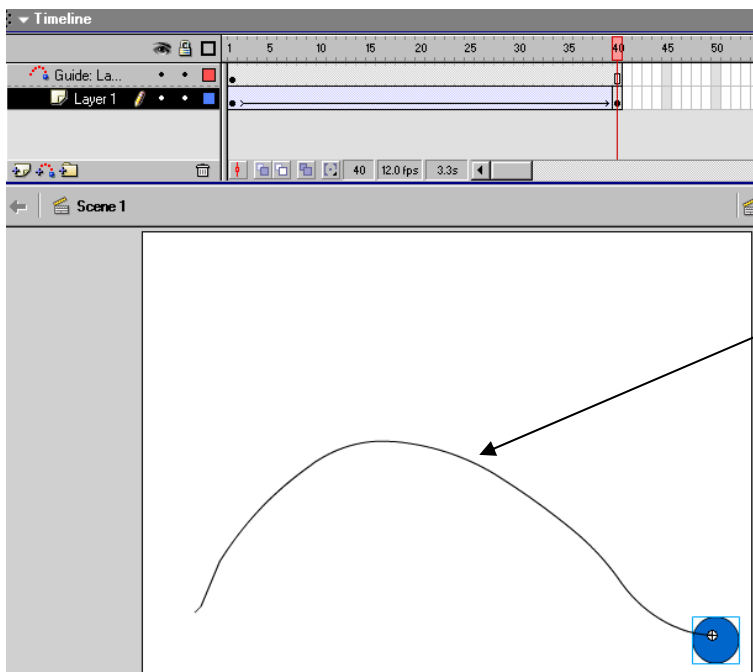
Motion Guides are used for very complex motions such as arcs or bouncing balls etc. A motion guide is a layer attached to the layer containing your object. You draw your motion using the drawing tools in the guide layer.

Using a new file create a circle in your library and drag this into layer 1. Insert a Keyframe at frame 40. Next go to **Insert, Timeline and Motion Guide.**

This will add your guide layer (see diagram below). Make sure you select **frame 1** of the guide layer and draw your motion with the pencil tool.



Now you need to click on **frame 40** of layer 1 (the layer containing your circle) and guide your circle slowly over the motion guide. Create the tween in layer 1 and test the movie. This does not always work the first time. If it doesn't work, ie. your circle doesn't follow the guide, click in frame 40 of layer 1 and guide your object over the motion guide again. This can take some practice. Your motion guide won't display in the Test Movie.



Draw your motion guide in the guide layer using the pencil tool

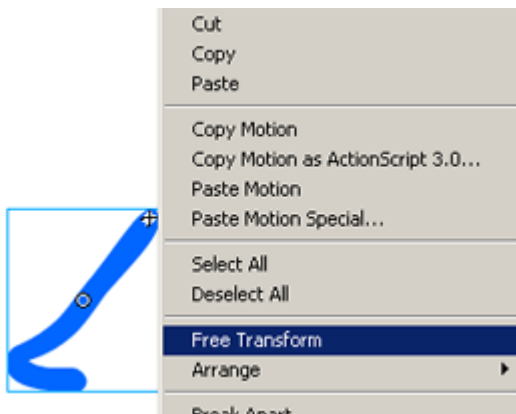
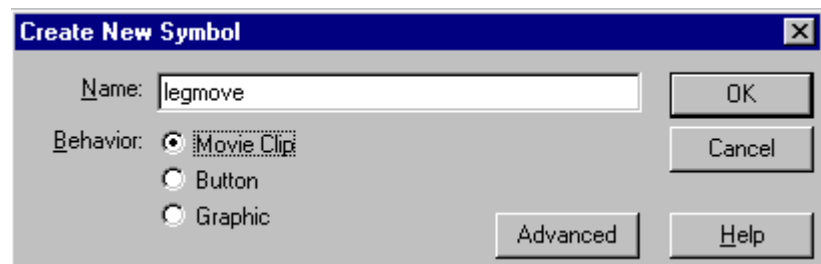
Nested Animations



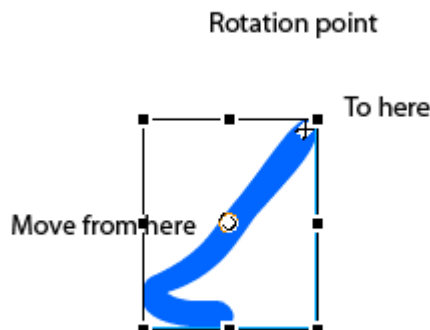
Nested Animations are a way of creating complex movements such as legs, arms and wings etc in a 'movie clip' and still allow simple movements in the main scene. Nested animations are small movies created in the library. This example illustrates a person walking.

Create two graphics in your library – a back leg and a front leg. Use the paint tool and keep the graphics simple for now.

Next create a new object in your library called 'legmove' and make this a **Movie Clip** rather than a graphic.

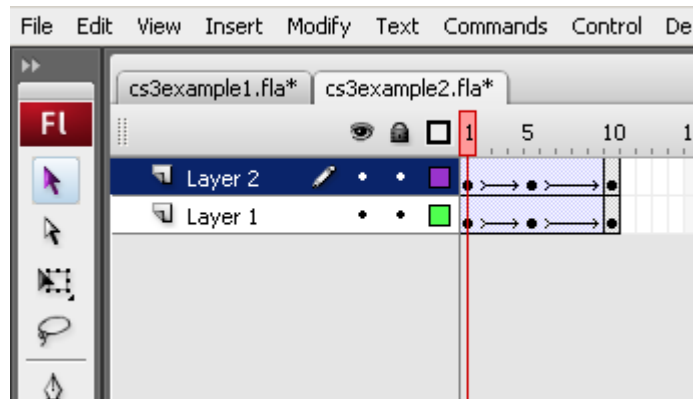
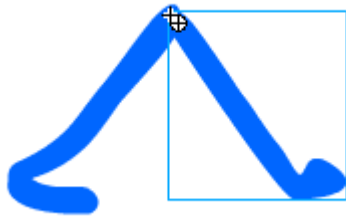


Drag your back leg on to layer 1 of the movie and insert a keyframe in frame 10 and a keyframe in frame 5. Create a **rotate** movement by clicking on the keyframe at 5, right-clicking on your object and choosing **Free Transform**. Next move the rotation point on to the registration point at the top of the leg, rotate the leg forward and create tweens between frames 1 to 5 and 5 to 10. Insert another layer and repeat this process in the new layer with the front leg rotating in the opposite direction.

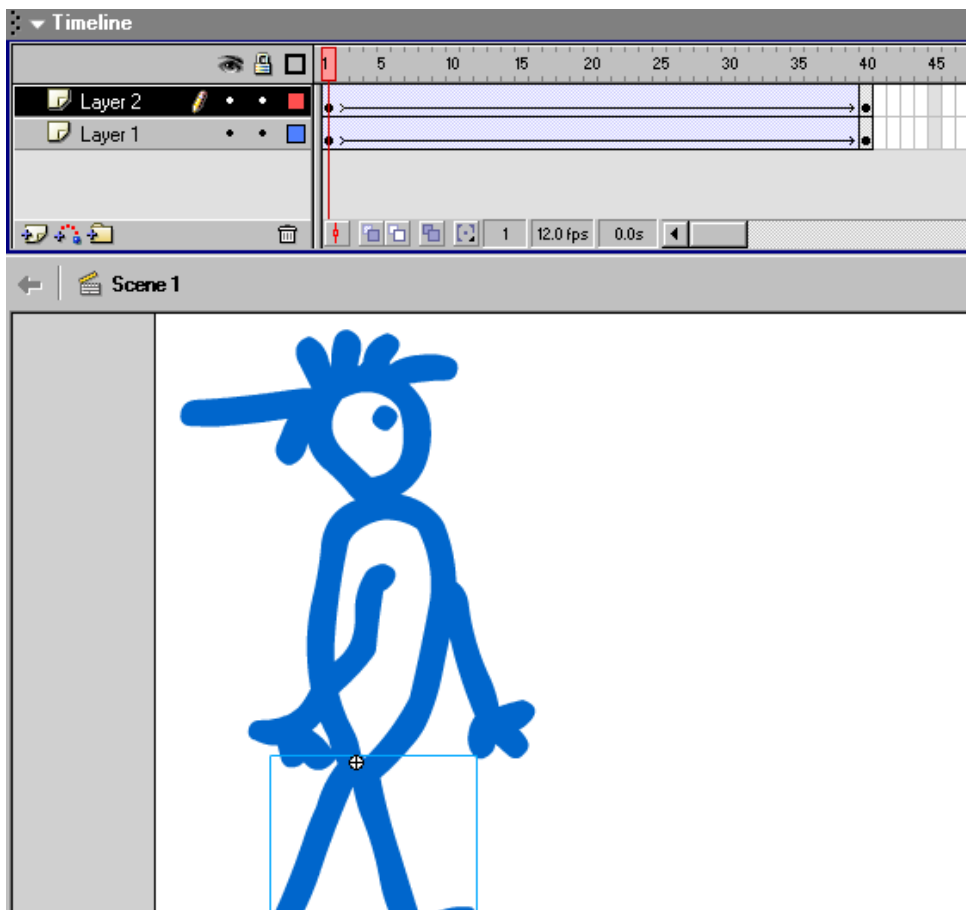


*Note you can't use the **Test Movie** feature when working in the library.*

You should now have two legs rotating in two layers over 10 frames.



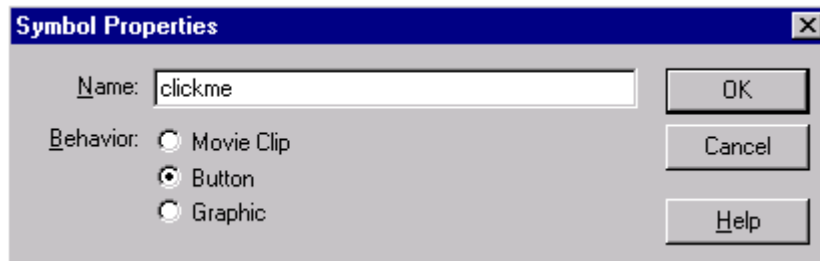
Now create another graphic for the body. Once you have this you can then combine the legmove movie clip with the body graphic in the main scene to get a walking effect across the screen. You will need the objects in separate layers and tween the motion from left to right.



Playing the movie in the design view won't show the legs moving, you need to test the movie to show all the motion.

Buttons

Buttons are used to add interactivity to your movies. Buttons are created in your library and you can use the drawing tools to make them. To make a new button create a new object and choose button from the properties window. A button uses the Flash programming language “ActionScript” to allow user interaction.



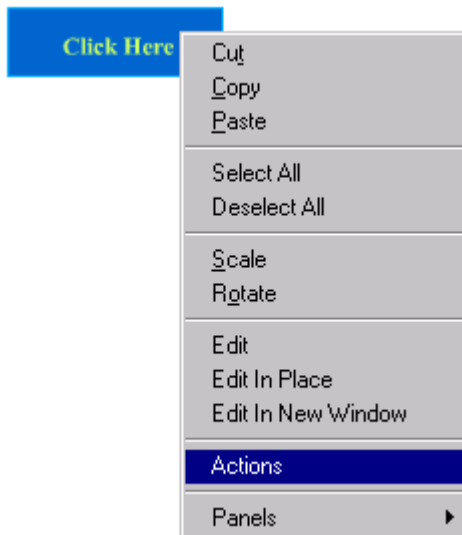
First create a new button called ‘clickme’.

A button has 4 states:

- Up
- Over
- Down
- Hit



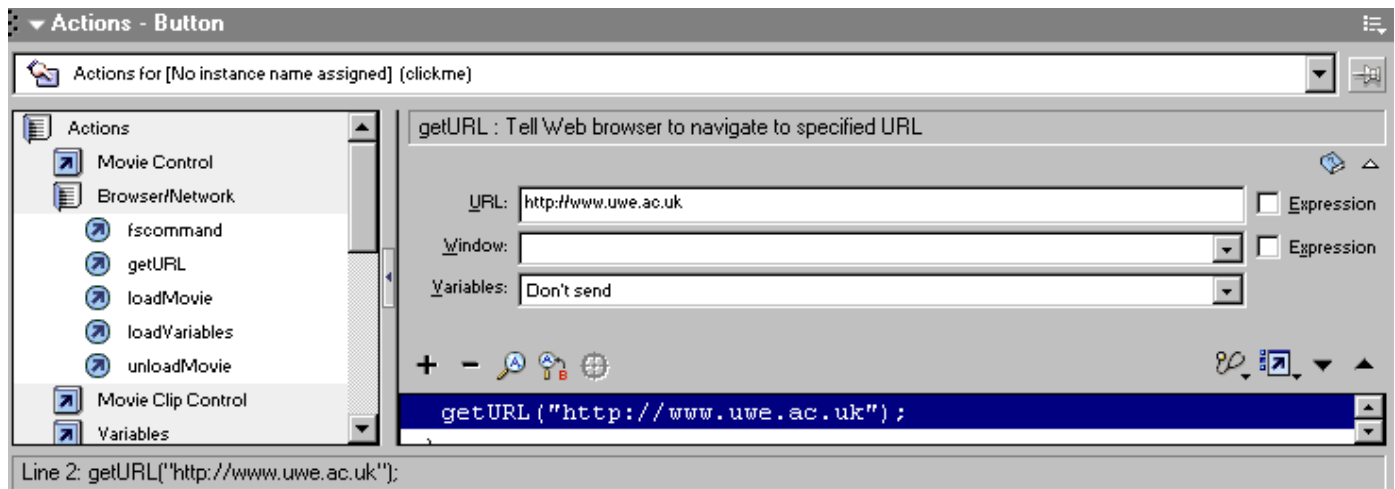
Different images can be placed in these frames to create effects such as a glow when the mouse pointer rolls over the button. For this example use the **Up** frame. Draw a rectangle and add the text Click Here.



Next go back to Scene 1 and add your button to the scene. Right click on the button and choose actions.

For this example, we are going to make a link to the UWE web site.

In the actions window double click GetURL. You can then enter the UWE web address (<http://www.uwe.ac.uk>).

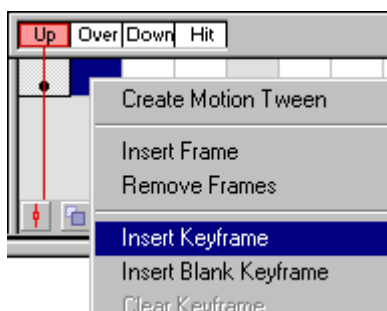


Test the movie and click on your button. You can also add movement to your button.

The Over Frame

To make your button dynamic you can add an image in the over keyframe. When the user rolls the mouse pointer over the button the new image will be displayed. This could just be a simple colour change.

For example, go to your previous button design by double clicking in the library window.

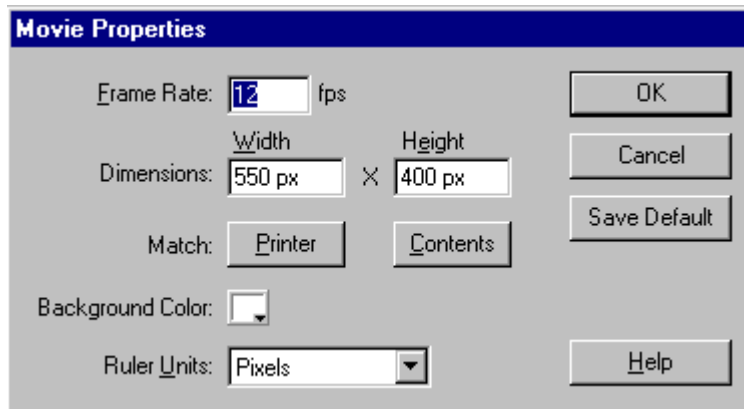


Right click on the over frame and insert a keyframe. This will also insert the graphics from the Up frame. Select the graphic in the Over frame and change the background to a contrasting colour. Once placed on the main scene, this will give the effect of a colour change when the user rolls over. This can also be used for other applications such as pop up information boxes. You can also do this in the Down frame which will be activated when the user clicks on the button.

The Hit Frame

The hit frame is for creating **Hit Areas**. These are invisible areas that define where the user can click for the action to happen. These are especially useful for text only or loine drawings. If text only is used the user has to click on a solid portion of the text. Drawing an invisible rectangular hit area around this ensures the event happens when the user clicks on the text. To do this simply insert a keyframe and use your rectangle tool to draw a box around the text or line drawing.

Movie Properties

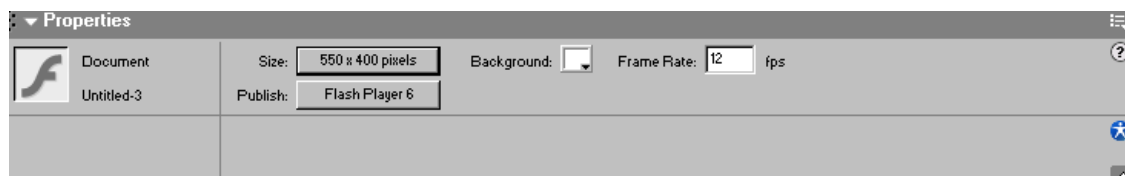


The Movie Properties function is for setting global attributes like size and background colour. To access the movie properties, click anywhere on your movie and use the Size button Properties toolbar

Note: it is wise to decide on the size of your movie at the very start of your project and design graphics accordingly. It is very

time-consuming to change these later.

The dimensions of your movie are set throughout and will affect any additional scenes.



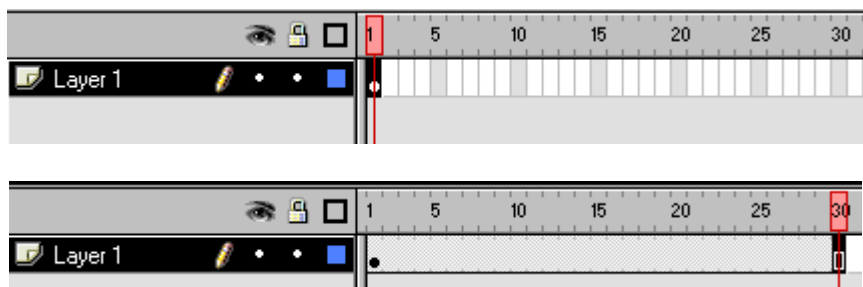
Manipulating Frames

Before using ActionScript for more complex procedures, it is worth knowing how to manipulate frames and keyframes so you can place them where and for as long as you want on the time line.

Setting the Range

To expand a keyframe over a number of frames, you can use the **Ctrl** key in conjunction with clicking and holding the mouse button.

For example if you have a single keyframe at frame 1 on the timeline and you want this to run over 30 frames, you would hold down the **Ctrl** key, click and hold on the keyframe and drag to frame 30.

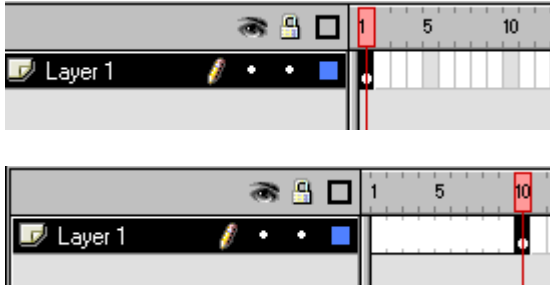


Note: this is only one keyframe - the circle at the beginning indicates the start of the keyframe and the square at the end the end of the keyframe.

This can also be done the other way round without using the Alt key. For example, if you add an object to a new layer that already has objects running over 30 frames on other layers, the object will be automatically added to a keyframe covering 30 layers, ie to the end of the movie. If you want to shorten this, click and hold on the square at the end of the keyframe and drag to the new position.

Moving a Frame

To move a keyframe, click and hold and drag to the new position.



Note: if you have more than one keyframe for an object, any actions added to the object associated with that keyframe will only be applicable for the one keyframe.

Try these techniques on the next example (Introduction to ActionScript).

Inserting Keyframes

You should already have experience of inserting keyframes to create movement. For example if you add an object to a layer at frame one, you can then insert a keyframe at frame 30, set the movement. When you create the motion tween it is set on the first keyframe over frames 1 – 29. If you want to insert a keyframe without the object appearing on the movie window you can insert a blank keyframe.

Copying and Pasting Frames

Copying and pasting frames is a useful technique, especially if you want to make similar movies over several scenes (see later) and make slight changes. To copy an entire move click on any frame in the timeline. Next press **Ctrl + A** or choose **Select All** from the **Edit** menu. Next choose Copy Frames from the Edit menu. You can then create a new scene or movie, click on the timeline and choose **Paste Frames** from the **Edit** menu.

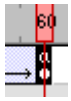


Introduction to ActionScript

We've already looked at using the GetURL action for the Click (on Release) event of a button. There are two main ways of using ActionScript:

- Assigning them to the action on a button
- Adding them to a keyframe on the timeline of the scene

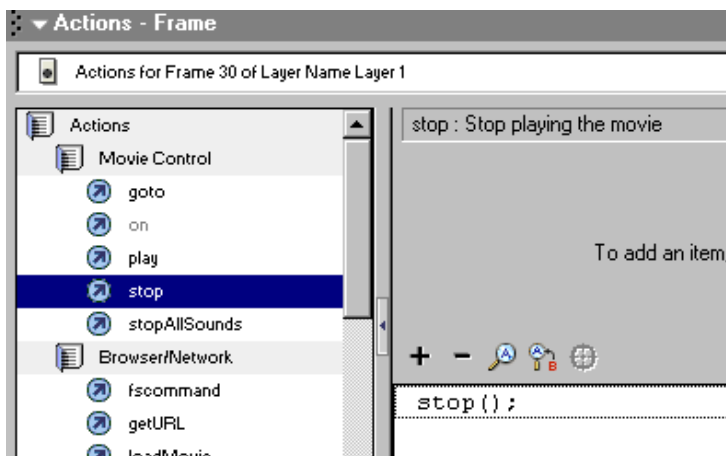
In the case of the button, the action will be triggered on the specified event eg. on the click of the mouse button. In the case of the keyframe, the action will be triggered when the play-head reaches that keyframe on the timeline. A keyframe can be identified as containing an action by the symbol α in the frame.



The Stop Action

This action is commonly used in a keyframe at the end of the movie to force it to stop rather than loop. It can also be used in the body of a movie, in conjunction with a button to create a pause or 'next' effect.

Either create a new movie over about 30 – 50 frames or use one of your previous examples, ensuring there is an object moving on the screen.



Choose any final keyframe on any layer, right click and select Actions, go to Basic Actions and double click on Stop. Test your movie, it should stop rather than loop.

The next example looks at using stop to pause a movie and then give the user choices on what to do.

The GoTo Action

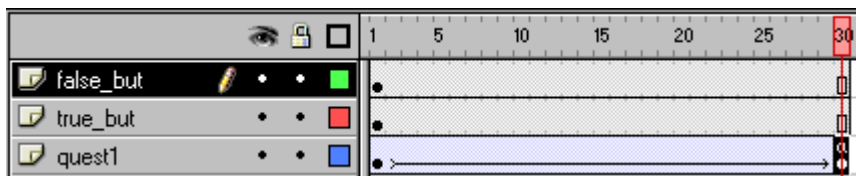
The GoTo action is commonly used for taking the user to a different place on the timeline or a different scene (see later). For this example we are going to build a movie where a 'true or false' question appears along with two buttons for each option. The true button will take the user to a 'congratulations' message and the false button to a 'wrong – try again' message.

First create a graphic with the text "French was the Official Language in England for over 600 years". Call your graphic quest1. Next add this text to your main scene and fade or move in

over 30 frames. Add a stop action to the keyframe at frame 30 (see previous section). Next create two buttons – one with the text “false” and one with the text “true”. Add these to two new layers over frames 1 – 30 and add some movement.

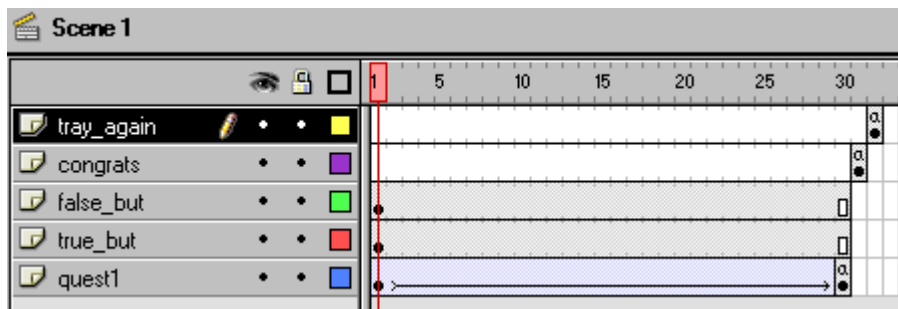


French was the official language in England for over 600 years

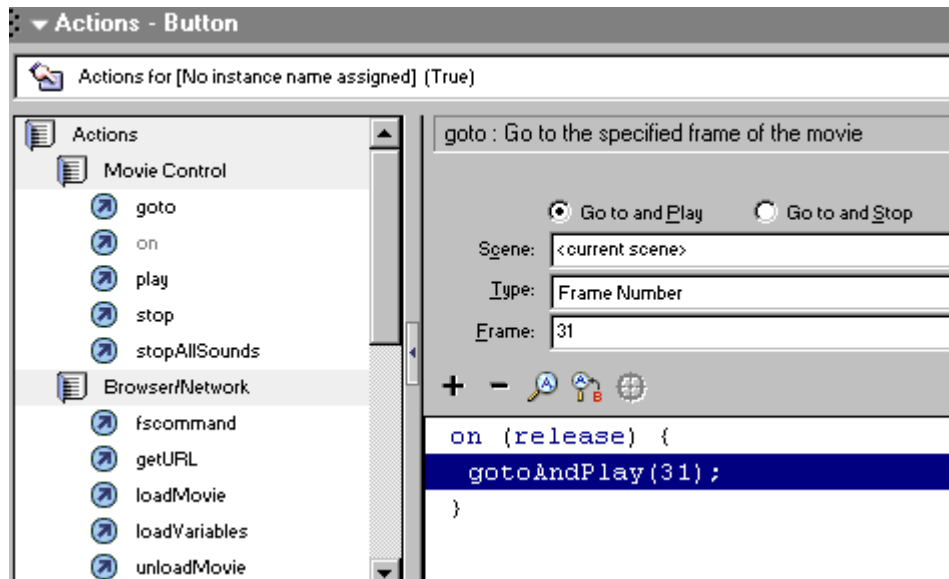


Next create two more buttons, one with the text “congratulations!” the other with the text “try again”.

On the main scene create two more new layers. Drag the congratulations button on to a new layer and then reposition the keyframe to frame 31 (you can do this by clicking and dragging, set this to run over one frame only). See previous section on how to manipulate frames. Do this on the other new layer with the try again button but position it at frame 32. Place a stop action on each frame.



Now the movie will play but will stop on frame 30 as there is a stop action on the question layer at 30. You can now direct the user to the appropriate message by adding GoTo actions to the true and false buttons. To add the true action, right click on the true button in the movie window and select Actions. Select GoTo from basic actions and type in 31 where prompted.



Do the same with the false button but type in frame 32. This way if the user clicks true the message will say “congratulations” and if they click false the message will say “try again”. You could then add more GoTo actions to the buttons in frames 31 and 32 either moving the user on or taking them back. This is a simple way of making games and quizzes and can be done over several scenes.

Inserting Scenes



When building complex movies the timeline can get very long and crowded. In this case it is sometimes easier to use different scenes. In the default state a movie will continue playing the scenes in order and then loop but stop actions can be added to give the user pauses to make choices.

To insert a scene go to the **Insert** drop down menu and choose **Scene**. You can access the different scenes using the menu in the top right corner.

Importing Graphics

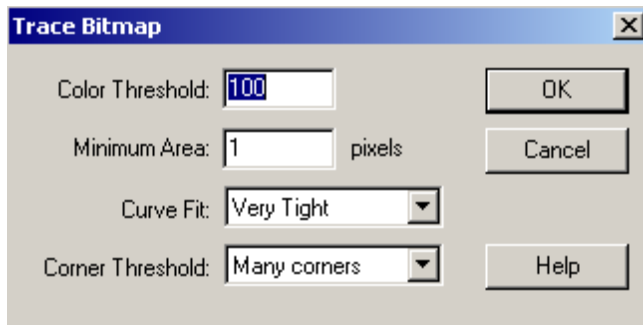
When importing graphics, it is good practice to import them into a graphic object in the library before using them in a scene. If you import a graphic directly into a scene you may lose options for manipulating the graphic.

To import a graphic, create a new graphic in the library and then go to **File** and **Import**.

Trace Bitmap

The Trace Bitmap function allows you to import a bitmap file such as a jpeg or gif and convert it to the Flash vector format. This can be useful if you want to edit the image without using Photoshop before importing.

Import an image as above (in a new library object). Next select the image and go to **Modify** and **Trace Bitmap**. You can then select the parameters for the accuracy of the conversion. The closer you get to the original, the larger the file size and the longer it will take.



Press OK and the conversion will be completed. You can then edit the image using the Flash drawing tools.

File Types

There are two main types of file in Flash

.fla
.swf

The .fla file is for saving your movie so you can continue working on it. The .swf file is for inserting into HTML using an editor such as Dreamweaver. The .swf files are created automatically when you test your movie.