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Add Flash to your website

Macromedia's latest suite of products means it's even easier to create a dynamic and interactive website. Be more than a flash in the pan – follow Jason Whittaker's guide to Flash MX

In recent years Flash has become the premiere tool for creating interactive multimedia online. The Macromedia application began life as an illustration and animation tool and, with subsequent releases, it became capable of much more sophisticated interaction.

In the latest version of Flash, which has been upgraded as part of the MX series, it shares a common interface with other Macromedia programs such as Dreamweaver, Fireworks and Freehand. There's also plenty of new features such as improved accessibility for disabled users, extra components for creating

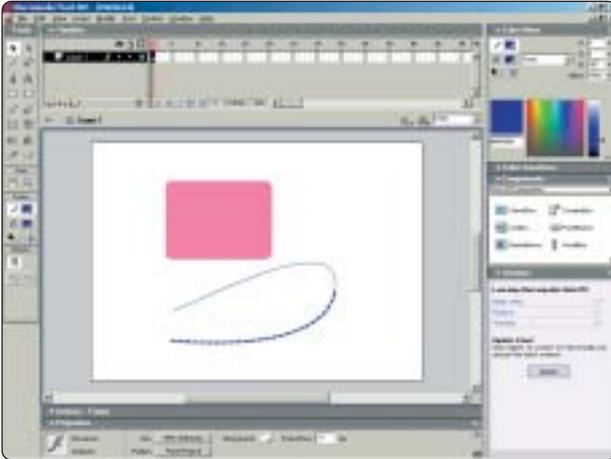
online forms and enhanced video capabilities including importing and exporting video embedded in Flash files.

Over the following pages we'll introduce Flash MX's tools, show you how to create simple animations and interactive movies and provide a basic guide to ActionScript.

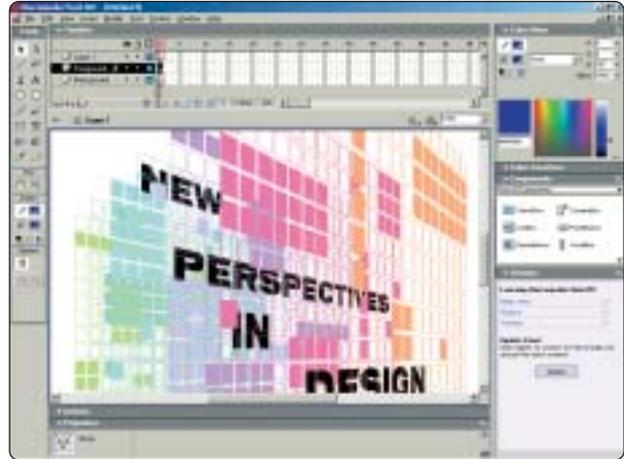
Layout and drawing

Flash's new and improved interface is designed to speed up your workflow. As with previous releases, the stage remains central to the workspace and toolbars provide quick access to the program's main tools. However, whereas earlier

Handling the drawing tools



1 With each successive version of Flash its drawing tools have become more sophisticated, though users of the Studio MX suite will probably prefer to create illustrations in Freehand MX. Adding basic shapes such as squares or ellipses is simple. The Pen tool even allows you to create Bézier curves. When adding an element to your page, colours are set using the Color palette beneath the main Tool panel and different tools display various options. When drawing a square, for example, you can set a corner radius, while the Pencil mode lets you create straight or smooth lines



2 Text is added to Flash documents in the same way as other drawn components. For every element of your design remember to make use of the Properties panel usually displayed at the bottom of the screen. Go to Windows, Properties if you cannot see it. Here you can set attributes such as fonts, line styles and colours. For more dynamic effects, you can use the Free Transform tool (the dotted square beneath the pencil in the Tools panel). This enables you to rotate, skew, scale and otherwise distort your drawings depending on the option you select

Using buttons and symbols

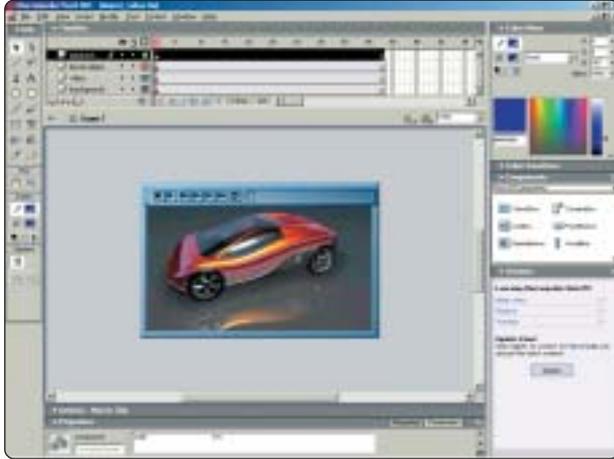


1 Symbols are an important component in creating interactive movies and animations. They are essential for buttons, but many other effects (such as changing an image's alpha channel to fade it in or out) require a graphic to be converted to a symbol. To create a symbol, select your image or text and hit F8 or go to Insert, Convert to Symbol. Alternatively, display the Library by pressing F11 and drag the item on to the main window. Flash allows you to create three types of symbol: Movie Clip, Button or Graphic. Any symbol can be accessed from the Library

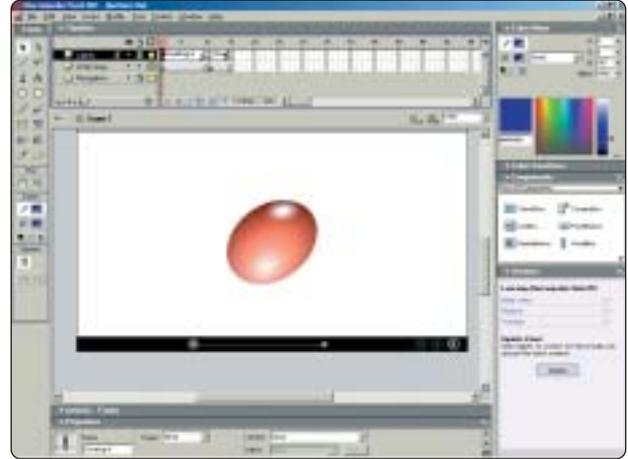


2 Buttons provide one of the most commonly used symbols. You can access a number of readymade buttons by going to Window, Common Libraries, Buttons. Once you have added a button to your document (either from the common library or by converting it to a symbol) you can edit it to provide feedback to users. Right-click your button and select Edit in Place. In the Timeline you will see four keyframes for each state of the button: Up, Over, Down and Hit. By changing the graphic for each of these states, your button will change shape or colour

Animating with the Timeline



1 The Timeline, located at the top of the workspace (if you cannot see it, go to Window, Timeline) is the main tool for animating movies. You can also add layers to the Timeline by clicking on Insert, Layer. This is particularly useful if you are working with complex documents. To create a simple animation, select the layer containing the graphic you wish to animate then choose Insert, Keyframe. Next, navigate to the end of the Timeline and insert another keyframe before changing your image. Choose Insert, Create Motion Tween and Flash fills in the 'in between' frames to create a smooth animation



2 In addition to providing a useful tool for animation, the Timeline can also use keyframes for navigation. If you select a frame in the Timeline and add a keyframe this can be named so that instructions from a user will move to that particular frame. To use keyframes for navigation they must be provided with a label. Go to the Properties panel and, in the text field beneath Frame, enter a name for that label and press Enter. The frame now displays a small, red flag. Buttons can then be given the command to go to and play a particular frame or stop at that point

versions made great use of floating palettes, Flash MX has collapsible panels that make all its elements available with a mouse click.

Central to creating and developing Flash multimedia files are the tools for drawing and adding elements (such as bitmap images or text) to your files. These are found in the main Tools palette on the lefthand side of the screen, where you'll find icons for drawing lines and shapes as well as adding fills, text and changing colours. Anyone used to a professional drawing application such as Illustrator, Freehand or CorelDraw will find these tools basic but Flash users can import a wide range of file formats while Studio MX includes Freehand.

Adding images to your Flash animation is relatively straightforward. After selecting a tool in the top panel of the Tools palette, colours can be changed in the panel beneath that for views (where you can zoom in on your work). The Options panel allows you to choose relevant buttons for specific tools – sizes and shapes for the brush tool or different types of lasso.

When introducing different elements to your multimedia file it is important you use the Properties palette, which you'll find beneath the stage in the main workspace. From here you can change colours, outline styles, font formats and file attributes such as size, background colours, frame rates for animations and whether the movie will be compatible with previous versions of Flash.

Symbols and animation

Symbols are reusable components of a movie such as images, animations or buttons. As well as keeping file sizes to a minimum, symbols are essential for certain effects such as defining buttons for user interaction.

Symbols are created by selecting the appropriate element and going to Insert, Convert to Symbol or dragging the component to the library. Each document has its own library (click on F11 to view this), which provides a convenient store for any assets used within a movie. There are three types of symbol: Movie Clip, Button or Graphic. When you drag a symbol on to the stage, a duplicated

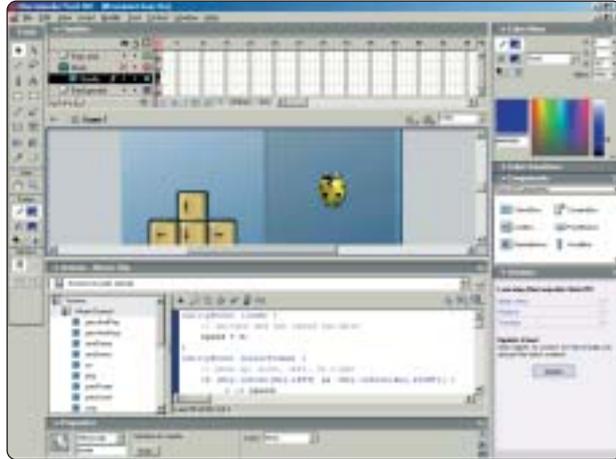
symbol is created which can then be scaled, rotated or transformed as you choose without affecting other instances of the symbol.

As properties such as the colour or transparency of a symbol can be changed over time, enabling you to use Flash to create sophisticated animations.

Central to this is the Timeline, a series of frames and layers above the stage where you set keyframes to define important events. By setting keyframes you can automate an animation by 'tweening' events (when Flash fills in the steps 'in between') rather than defining changes to elements in your movie at every step. For example, if you wish a symbol to move across the stage you must first define two keyframes for starting and finishing points then go to Insert, Create Motion Tween to define a smooth motion.

Animations cover more than linear motion. You can also use them to rotate symbols, change their colours or cause them to fade over time. Once you have selected an appropriate symbol go to the Transform panel (select Windows,

Adding actions to a movie



1 Actions are, unsurprisingly, added to a movie in the Action panel. In its default mode this displays only the most basic lines of ActionScript, although toggling between Normal and Expert mode (from the drop-down menu in the top righthand corner of the panel) will display a larger screen into which you can type complex scripts. To add a new action you must select a frame or symbol and then click on one of the controls listed on the lefthand side of the Action panel



2 The most common actions used in a movie are those that control playback and navigation. These are listed under Movie Control and include actions such as `gotoAndPlay/gotoAndStop` (for moving to a particular frame and then continuing or stopping), `nextFrame/prevFrame` and `Play/Stop`. If you select one of these actions you will see that Flash adds a line of code to your movie followed by brackets (that can send further variables to the command) and a semicolon marking the end of the line, such as `'Stop()'`;

Transform) to access Flash's rotation and skewing tools. The Properties panel is used for other changes relating to colour or transparency.

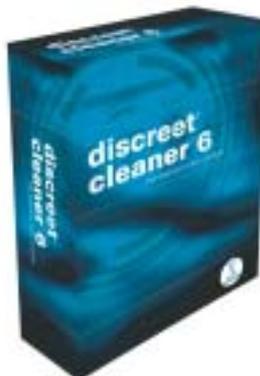
You'll find it easier to use layers when creating complex animations. You can add new layers to a Flash movie by choosing Insert, Layer. It's easy to rename these

layers: simply double-click on the layer in question and type in a new title. Using layers enables you to transform and animate symbols separately from other components, so one layer may contain an image that fades out of view while another slides a title over that image.

Video with Flash

One of the most exciting additions to Flash MX, due to the inclusion of the Sorensen Spark codec, is the ability to work with video. This means that you can create effective video presentations in Flash and know that they will play on any system using the latest Flash player.

For users of older versions video is still available with the help of a useful application – Wildform's Flix (www.wildform.com, \$29 Lite, \$149 Pro). Flix transforms video files into Flash-compatible vector images. The cheapest Lite version simply converts files with the minimum of effort, while the Pro release includes tools and presets for transforming video into animated cartoons. Macromedia also recommends preparing video to as high a quality as possible before importing into Flash. While many video editors provide conversion tools for preparing video with set codecs, the industry standard is Cleaner, which should be available for the PC as version 6.0 (www.discreet.com, £526). In addition to optimising video for use in Flash movies, Cleaner is also particularly convenient for preparing a wide range of video formats for distribution online whether as Mpeg, Real or QuickTime files.



Interact with buttons

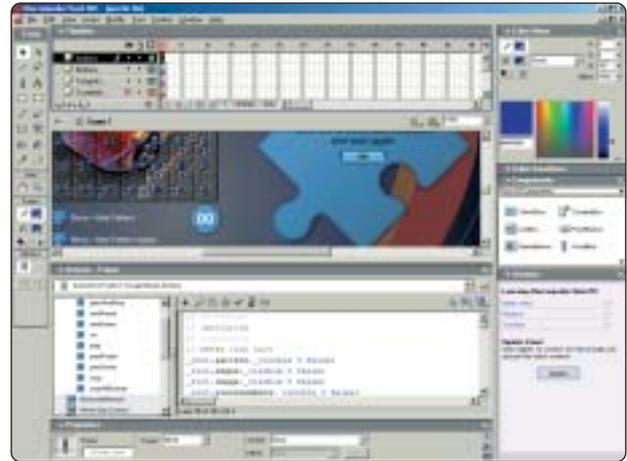
Symbols, tweening and layers provide sophisticated animation effects in Flash but it's also possible to let your audience interact with a movie. This is one of Flash MX's best features. At its simplest this can consist of a button to start and stop an animation, navigate the movie by moving to keyframes or execute an ActionScript (see *Stick to the script* on page 115).

To create an interactive button simply draw or design the general shape of your control, select it and convert it into the appropriate type of symbol. Button symbols differ from ones that are images or movie clips – not only in the different types of actions associated with them, but also in the different reactions (or states) they display when the mouse rolls over or clicks on them.

Get to grips with ActionScript



1 ActionScript is a flexible JavaScript-style programming language that can be used to send instructions to a movie. Every element of a document can be controlled using such scripts and expert users often prefer to use ActionScript instead of the Timeline for navigation and animation. To make full use of the ActionScript language, follow the Introduction to the Language included in the Tutorials listed under Help and refer to the ActionScript Dictionary



2 It is possible to write ActionScripts without a complete understanding of the language. ActionScript is an object-oriented scripting language – that is, it organises lines of scripts into objects (such as the commands to control a button) that can be reused and also called anywhere from a script. If you create an object such as a colour – for example, by writing `myColor = new Color(red);` – you can call `myColor` at any point you require it in your script

To set the different states of a button, right-click on it and select Edit In Place. This displays a new Timeline for that button consisting of Up, Over, Down and Hit. Once a keyframe is placed in each of these states the button can be edited so it signals to users that it is an active area (such as a change of colour during a mouse rollover).

After a button has been designed actions can be ascribed to it in the Actions panel found beneath the stage. The most common actions such as Movie Control are listed at the top of the panel. This makes the Timeline go to a particular frame, stop or start an animation, or stop all sounds. Commands can also be sent to the document, telling it to print, load or unload a particular movie clip. Using the Action panel in Normal mode you can build up fairly complex scripts step by step without the need to understand ActionScript in great detail.

Stick to the script

A considerable amount of interactivity can be incorporated into a movie using the actions and properties listed in the Action panel. For more control over your movie, however, you should be prepared to get to

grips with ActionScript. We are only going to cover some of the basic features here; for more information on scripting in Flash consult the ActionScript Dictionary under the Help menu.

ActionScript is a scripting language similar to JavaScript. It allows the designer to include objects and actions that instruct a movie what to do – for example, to play a sound or movie when a button is pressed – or to move objects across the screen when arrow keys are used. In Normal mode most of the information in a script is hidden from the designer, but Expert mode provides a blank panel in which the user can type scripts with code hints that suggest likely events that will work with a particular command.

To swap between Normal and Expert mode, click the arrow in the top righthand corner of the Actions panel and select your preferred view.

To begin adding actions, select an appropriate event, property or function from the list on the lefthand side. In Expert mode you can begin typing your script directly into the pane on the righthand side of the panel. It is worth remembering that in both modes there is a context-sensitive reference tool available

to explain particular commands. To access this click on the small book icon at the top of the panel.

Actions can be assigned to frames, buttons or complete movie clips so when a movie starts or moves to a particular frame you can use this as a signal to trigger a particular event such as playing a sound or animation. Buttons are one of the most common ways of providing interactivity using ActionScript, moving to particular frames or launching other movies. Finally, when a movie is loaded or receives data it can execute a script to perform a certain task.

Flash forward

Despite being a proprietary format, Shockwave for Flash has, like Adobe's PDF (portable document format), become widely accepted online. In Macromedia's case, it's because it addressed an early need for a vector-based drawing and animation application that could provide small files for quick download.

Since then, Macromedia has worked hard to update its program and, in so doing, has transformed it into the most comprehensive tool available for producing rich content online. ■