

Adobe Flash 8

Part 2: Introduction to Animations

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Introduction

Adobe Flash 8 is the most advanced authoring environment for creating interactive and animated Web sites. It gives Web designers an efficient way to send artwork and animation over the internet. Flash uses vector graphics, which can be scaled to any size without losing clarity/quality. Flash also uses easy scripting for adding interactivity and animation.

This workshop will cover basic animation techniques used in Flash. The most common technique today is to define *keyframes*, then let the computer generate the frames in between. This involves several techniques. In Flash it is called *motion tweening* and *shape tweening*. This handout is an introduction to animations using Flash.

Animation Basics

A movie consists of separate frames. When the frames are put together they form the movie. Animation is the technique used to create a movie or film by defining each frame individually. Each frame can be generated by a computer, or defined by the user. Animation is an optical illusion of movement created by having a consecutive display of static frames. These frames may be generated by a computer, or come from photography or a painted image. When the frames are put together and viewed it gives the illusion of continuous movement (see Figure 1). Computer animation has advanced considerably and is today at a stage where it can generate near life-like movies.

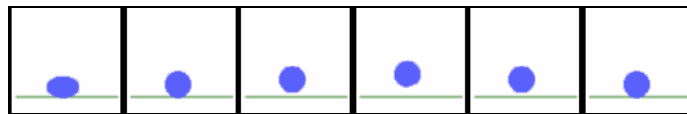


Figure 1 - Illusion of Continuous Movement

THE TIMELINE

The *timeline* is used to work with animations in Flash (see Figure 2). Each frame of the Flash movie is represented on the timeline (see Figure 3). By default, Flash will display the timeline for **Scene 1**. A Flash file can contain multiple scenes, and each scene can have its own timeline.

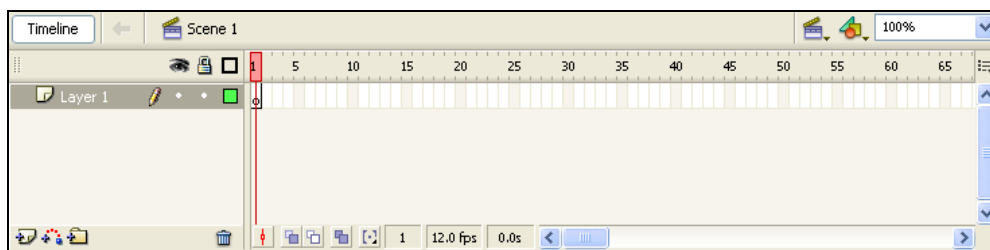


Figure 2 - The Timeline

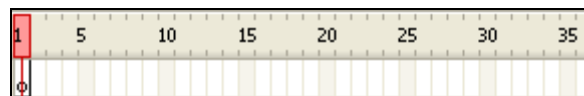


Figure 3 - Frames in the Timeline

THE LIBRARY

One of the fundamental parts of Flash is the *library*. When using the library, it is possible to have a “master” version of the graphic. With one change to the “master” version of the graphic all places where this graphic is referred to will also change. When something is placed in the library

it becomes a *symbol*. Anything that is created in flash and placed on stage can be converted into a symbol.

When a symbol is used outside the library it is called an *instance*. The instance refers to the symbol. There is no limit to how many instances that can be created from a symbol. When the symbol is edited, all the instances referring to the symbol will change accordingly.

To create a symbol:

1. Select the **F**ile menu ► **N**ew.... The *New Document* dialog box opens.
2. Select “*Flash Document*” in the **T**ype: list box.
3. Click the **O**K button. A blank Flash file will be created.
4. Select the **I**nsert menu ► **N**ew Symbol.... The *Create New Symbol* dialog box opens.
5. Type [**C**ircle] in the **N**ame: text box.
6. Click the **G**raphic option button in the **T**ype: section.
7. Click **O**K button. The symbol definition scene opens.
8. Click the **O**val Tool (**O**) on the **T**oolbox and draw a circle anywhere in the first frame (see Figure 4).

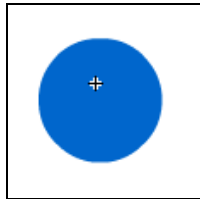


Figure 4 – Defining a Symbol

NOTE: Notice the slightly changed timeline. Flash has changed to the symbol definition scene. On top of the timeline it will now say the name of the symbol that is being edited (see Figure 5).



Figure 5 – The Current Scene

To use the symbol:

1. Click the **Scene 1** button on the timeline to return to **Scene 1**.
2. If the **Library** panel is not open, select the **W**indow menu ► **L**ibrary.
3. From the **Library** panel click and drag “*Circle*” symbol on to the stage (see Figure 6). An instance of the symbol has now been created.

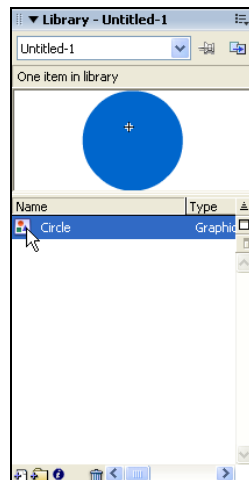


Figure 6 - The Library Panel

INSERTING A NEW KEYFRAME

Keyframes are frames that are user defined. By defining keyframes Flash can generate the frames between the keyframes using a process called *tweening*.

To insert a new keyframe:

1. Select the **F**ile menu ► **N**ew... The *New Document* dialog box opens.
2. Select “*Flash Document*” in the **T**ype: list box.
3. Click the **O**K button. A blank Flash file will be created.
4. Right-click on frame 12 in the timeline (see Figure 7). A pop-up menu will appear.
5. Select **I**nsert **K**eyframe. A new keyframe will be inserted. This technique will be used frequently throughout this handout.

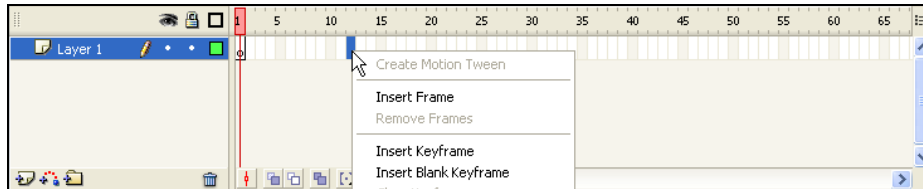



Figure 7 - Inserting a New Keyframe

OLD-STYLE ANIMATIONS

Making a frame-by-frame animation is much like making a flipbook. In a flipbook, each page contains a slightly different picture. Fanning through the book will give an illusion of motion or an animation. Although this is not the most effective way to do animations in Flash, understanding this concept will provide a better understanding when using motion and shape tweening.

To apply old-style animation to a circle:

1. Select the **F**ile menu ► **N**ew... The *New Document* dialog box opens.
2. Select “*Flash Document*” in the **T**ype: list box.
3. Click the **O**K button. A blank Flash file will be created.
4. Using the **O**val Tool (O) , create a circle in the top-middle section of the stage (see Figure 8).

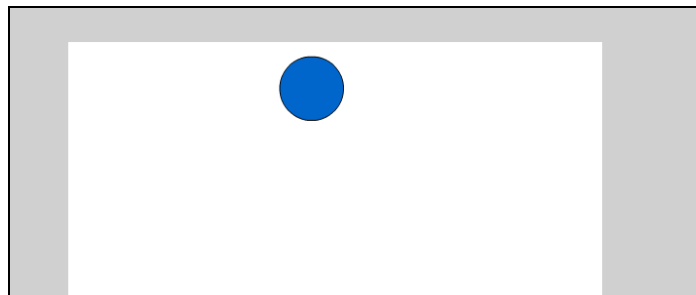



Figure 8 - Inserting a Circle

5. On the timeline, insert a new keyframe to the right of the current frame.
6. Left-click and drag the circle slightly lower than the first circle using the **S**election Tool (V)  (see Figure 9).

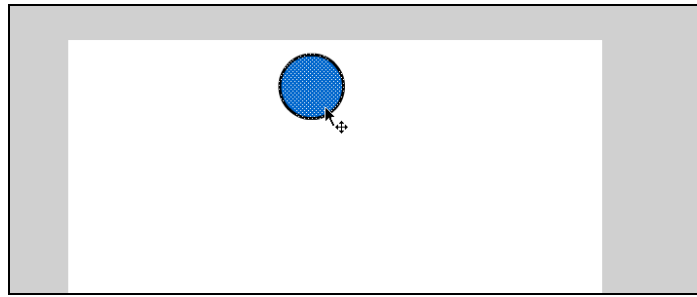


Figure 9 - Moving the Circle

7. Repeat step 4 to 6 till the circle is at the bottom of the screen. (See Figure 10)

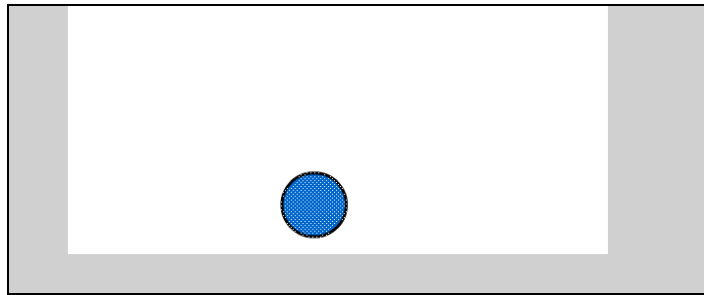


Figure 10 - Circle at the Bottom of the Screen

8. The animation is done. To play the animation, hold down the **[Ctrl]** key while pressing the **[Enter]** key on the keyboard.

FRAMES AND FRAME RATE

The more frames per second, the better will be the illusion of continuous movement. The default in Flash is 12 frames per second. This will be sufficient in most cases. However, depending on which kind of animation is created, and the level of realism, it may be desirable to switch to a different frame rate.

To change the frames per second in Flash:

1. Select the **Modify** menu ► **Document...** The *Document Properties* dialog box opens (see Figure 11).
2. Type **[24]** in the *Frame rate:* text box, then click the **OK** button. This will change the frame rate from 12 to 24 frames per second.

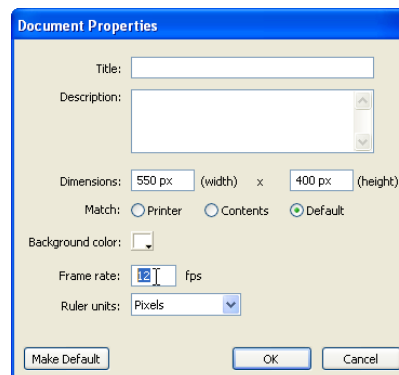


Figure 11 - Document Properties

3. Test the animation by holding down the **[Ctrl]** key while pressing **[Enter]** key on the keyboard. Notice how the circle moves faster.

Animations in Flash

This section will deal with the different techniques used to create animations in Flash. There are 2 basic techniques used: motion tweening (see Figure 12) and shape tweening (see Figure 13). Motion tweening applies motion to any object in Flash whereas shape tweening applies motion, but in addition it also allows modification to the shape of the object. Shape tweening is less space efficient because it generates a new copy of the object for each frame. Motion tweening uses a reference to the original object and creates an instance of it for each frame, applying only the given offset in location.



Figure 12 - Motion Tweening



Figure 13 - Shape Tweening

MOTION TWEENING

Old style animation requires a lot of work because the artist has to draw each frame manually. When using motion tweening in Flash, all that needs to be done is defining two keyframes. Flash then fills in the gaps between the two frames (see Figure 14). With motion tweening the user is able to animate the following properties: location, scale, rotation, tint and alpha.

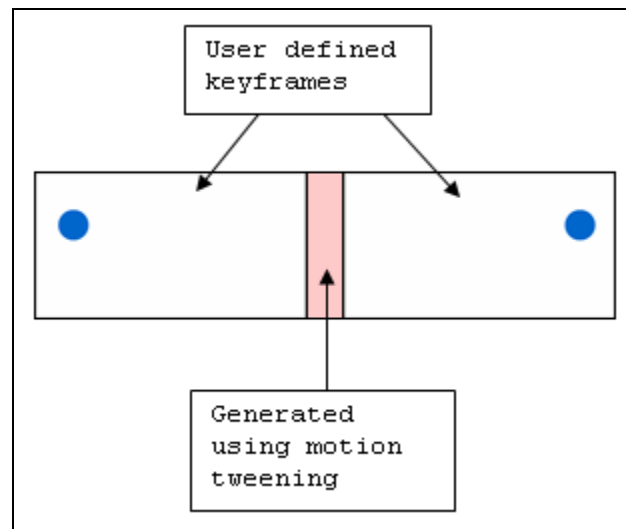



Figure 14 – Flash Fills in the Extra Frames Using Motion Tweening.

The following example will demonstrate how to create an animation of a circle moving from the left side of the screen to the right side.

To perform a simple motion tween:

1. Select the **File** menu ► **New...**. The *New Document* dialog box opens.
2. Select “**Flash Document**” in the *Type:* list box.
3. Click the **OK** button. A blank Flash file will be created.

4. Select the **Insert** menu ► **New Symbol....** The *Create New Symbol* dialog box appears.
5. Type [**Circle**] in the *Name:* textbox.
6. Click the **Graphic** option button in the *Type:* section.
7. Click the **OK** button. The symbol definition scene opens.
8. Using the **Oval Tool (O)** , draw a circle anywhere in the first frame (see Figure 15).

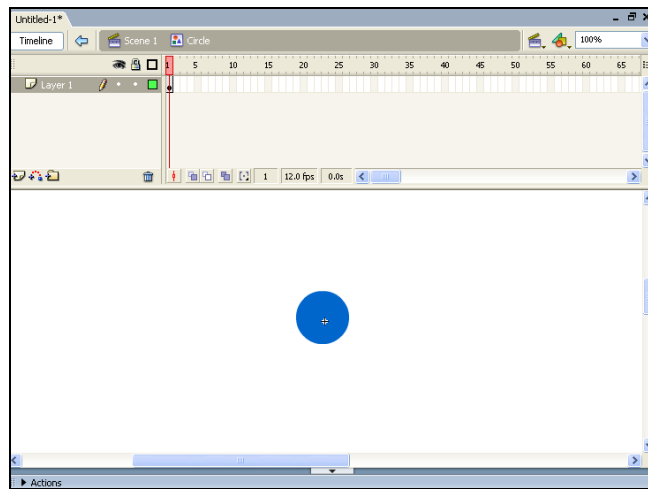


Figure 15 - Defining a New Symbol

9. Click the **Scene 1** button on the timeline (see Figure 16). This will bring Flash back to **Scene 1**.



Figure 16 – Buttons on the Timeline

10. Drag newly created “*Circle*” symbol from *Library* panel to the left side of the first frame in **Scene 1** (see Figure 17).

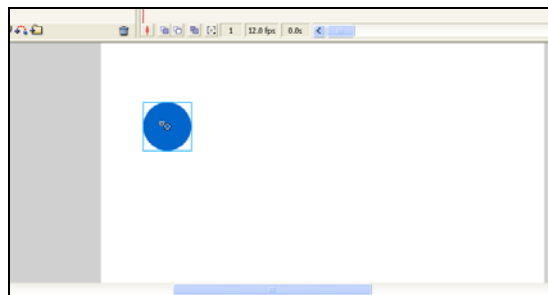


Figure 17 - Creating an Instance of a Symbol


11. Right-click inside frame 12 and select **Insert Keyframe**.
12. With the **Selection Tool** , move the circle in frame 12 to the right side on the stage (see Figure 18).



Figure 18 - Moving the Circle to the Right Side of the Stage

13. In the timeline, left-click on frame 1, then hold down the **[Shift]** key on keyboard and left-click on frame 12. Frames 1 to 12 will be selected (see Figure 19).

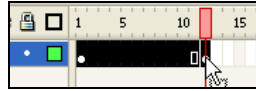


Figure 19 - Selecting Multiple Frames

14. In the *Properties* panel, select “**Motion**” from the *Tween:* drop-down list (see Figure 20).

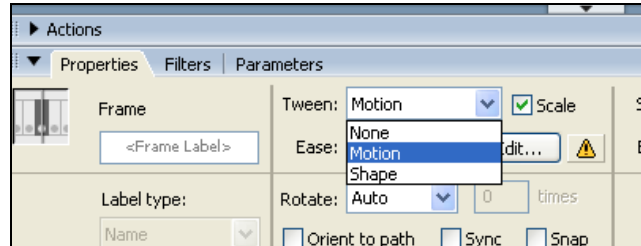


Figure 20 - Adding Motion Tween to Frames

15. The animation is done. To play the animation, hold down the **[Ctrl]** key while pressing the **[Enter]** key on the keyboard.

SHAPE TWEENING

Shape tweening is a technique in Flash that can be used to create a morph effect. Morphing is an animation style that describes one shape turning into another shape. As with motion tweening the user only needs to define the first and the last frame (see Figure 21). Flash fills in the rest of the frames. Shape tweening increases the file size, since the flash library and symbols are not available for this tween type.

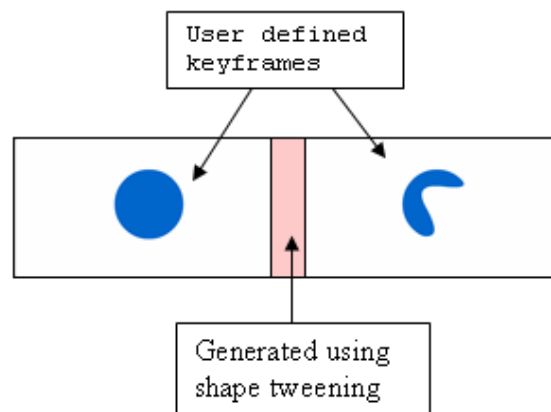



Figure 21 – Flash Fills in the Extra Frames Using Shape Tweening.

This following example will demonstrate how to create an animation of a circle changing its shape.

To perform a simple shape tween:

1. Select the **F**ile menu ► **N**ew... The *New Document* dialog box opens.
2. Select “**Flash Document**” in the *Type:* list box.
3. Click the **OK** button. A blank Flash file will be created.
4. Using the **Oval Tool (O)** , draw a circle as shown in Figure 22.

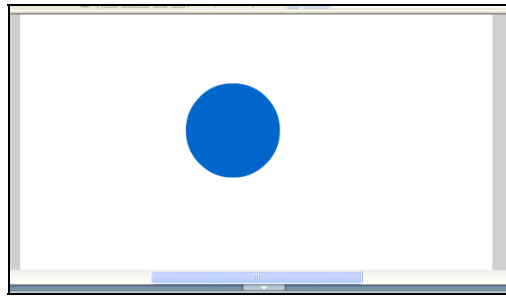


Figure 22 - A Simple Circle

5. Right-click inside frame 12 and select **Insert Keyframe**.
6. Deselect the circle in frame 12 by clicking anywhere outside the circle.
7. Select the **Selection Tool (V)** from the **Toolbox**.
8. Place cursor near the outer edge of the circle as shown in Figure 23.

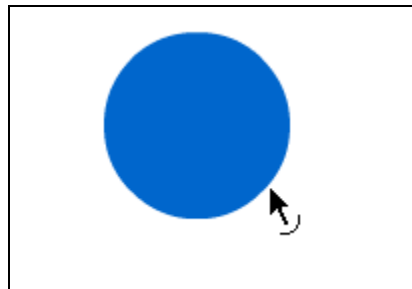


Figure 23 - Using the Selection Tool Next to a Shape

9. Left-click and hold the mouse button and drag to change the shape of the circle into something like in Figure 24.



Figure 24 - Changing the Shape of the Circle

10. Left-click in frame 1 on the timeline.
11. In the **Properties** panel, select “**Shape**” from the **Tween:** drop-down menu (see Figure 25).

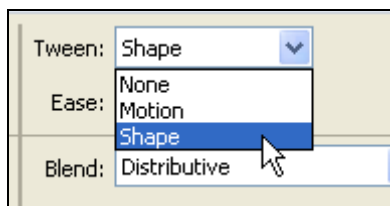


Figure 25 - Adding Shape Tween to Frames

12. To play the animation, hold down the **[Ctrl]** key while pressing **[Enter]** key on the keyboard.

ANIMATING TEXT

Text animations are no different than regular animations using motion tweening. The first step is to create the necessary symbols containing the text. After the symbols are created, they can easily be added to the keyframes.

Adding animation to text:

1. Select the **F**ile menu ► **N**ew.... The *New Document* dialog box opens.
2. Select “*Flash Document*” in the *Type:* list box.
3. Click the **O**K button. A blank Flash file will be created.
4. Select the **I**nsert menu ► **N**ew Symbol.... The *Create New Symbol* dialog box opens.
5. Type [Text] in the *Name:* text box.
6. Click the **G**raphic option button in the *Type:* section.
7. Click **O**K button. The symbol definition scene opens.
8. Using the **T**ext Tool (T) **A** add some text in the first frame (see Figure 26). Format the text as desired.



Figure 26: Adding Text to the Graphic Symbol

9. Click the **S**cene 1 button on the timeline to go back to **S**cene 1.
10. Add the newly created symbol to top-left corner of the stage in frame 1 by left-clicking and dragging it from the *Library* panel.
11. Insert a new keyframe in frame 24.
12. With the **S**election Tool (V) **A**, move the text to middle of the stage in frame 24.
13. Left-click in frame 1 on the timeline.
14. Select “*Motion*” from the *Tween:* drop-down menu.
15. To play the animation, hold down the [Ctrl] key while pressing the [Enter] key on the keyboard.

ADDING TIMELINE EFFECTS

Flash has several built-in effects that can be added to an animation. These are common special effects such as “*Blur*,” “*Drop Shadow*,” “*Expand*,” and “*Explode*.” When using these built-in effects Flash will generate the necessary symbols and frames. These symbols should not be reused or modified as doing so risks interfering with the effect. This section will go through the “*Blur*” and “*Explode*” effects in particular, but a similar approach can be used to add other built-in effects.

Adding the Blur Effect

This example is a continuation of the text animation created in last exercise; in addition to moving the text from one place to another, a “*Blur*” effect will be added to the end of the animation.

To add the Blur effect:

1. Left-click in frame 24 on the timeline. This will bring frame 24 to the stage.
2. Select the **I**nsert menu ► **T**imeline **E**ffects ► **E**ffects ► **B**lur. The *Blur* dialog box opens (see Figure 27).

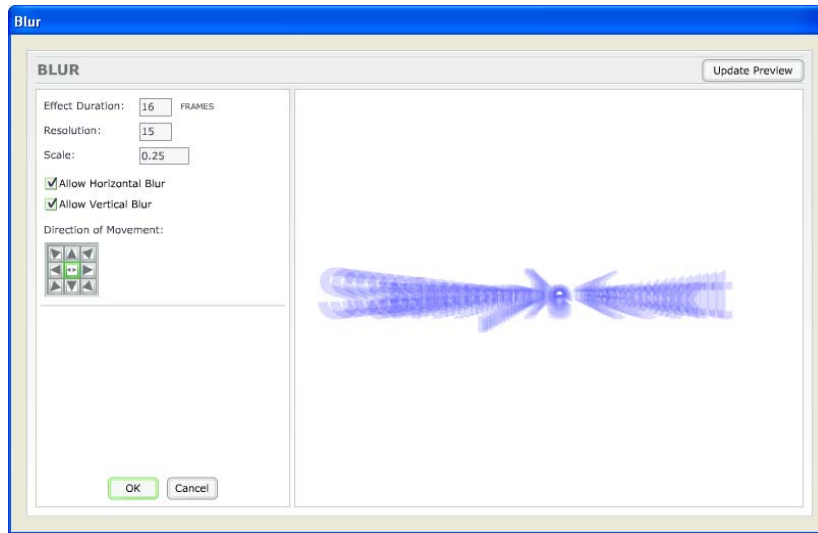


Figure 27 - The Blur Dialog Box

3. Adjust the settings until the desired effect is seen (see Table 1). Click the **Update Preview** button to view a preview of the adjustments.
4. Click the **OK** button to apply the effect.
5. To play the animation, hold down the **[Ctrl]** key while pressing the **[Enter]** key on the keyboard.

Table 1 - Blur settings

| Blur Setting | Result |
|--------------------------|---|
| Effect duration | Affects the duration of the effect. |
| Resolution | Affects the number of individual copies of the object used to create the blur effect. The blur effect copies the object and scales it, while fading out at the same time. The higher the number, the more objects scaled and faded out within the duration specified. |
| Scale | Affects the scale of each copy of the object that is made to simulate the blur effect. |
| Horizontal/Vertical Blur | By selecting or deselecting these checkboxes, the direction of which the blur effect goes can be specified to either horizontal or vertical, or both. |
| Direction of movement | Affects the direction of the effect. |

Adding the Explode Effect

The explode effect is a special effect that will make it look as if an object is exploding. To be more specific, the effect will split the object into smaller parts, and in a number of consecutive frames these parts will rotate and move from each other.

Adding an explode effect to a bomb:

1. Select the **File** menu ► **Open....** The *Open* dialog box appears.
2. Locate and select the “*bomb.fla*” file from the data files folder.
3. Select the **Insert** menu ► **Timeline Effects** ► **Effects** ► **Explode**. The *Explode* dialog box opens (see Figure 28).

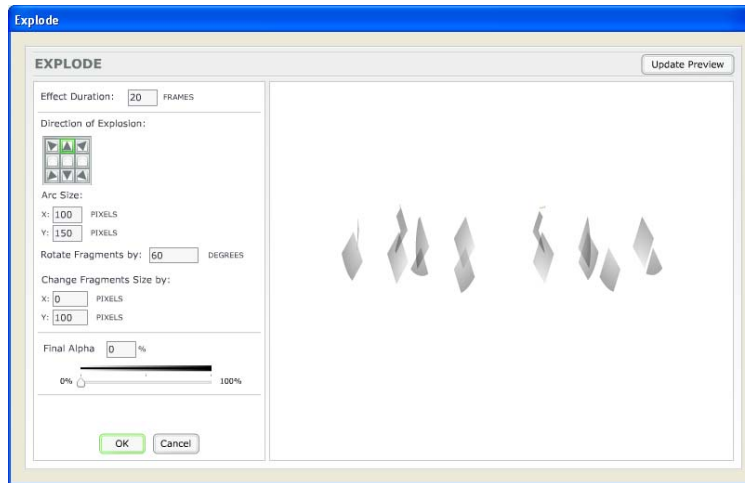


Figure 28 - Explode Dialog Box

4. Adjust the settings until the desired effect is seen (see Table 2). Click the **Update Preview** button to preview the adjustments.
5. Click the **OK** button to apply the effect.
6. To play the animation, hold down the **[Ctrl]** key while pressing the **[Enter]** key on the keyboard.

Table 2 - Explode settings

| Explode Setting | Result |
|------------------------|--|
| Effect duration | Affects the duration of the effect. |
| Direction of Explosion | Affects the direction in which the fragments of the explosion will travel in. |
| Arc Size | Affects how much the fragments trajectory is curved. The various details of the curve can be specified using this setting. |
| Rotate Fragments by | Affects how many degrees the individual particles of the explosion will rotate. |
| Final Alpha | Affects the final transparency of the fragments. A value of "0" will ensure that the fragments fade out. |