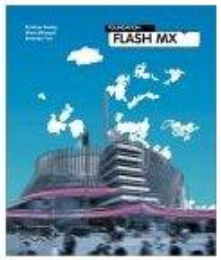
Macromedia Flash MX

Versions

- Macromedia **Flash MX**
  - **Not** Flash MX 2004 (the newer version)
  - Not any older version
- No site license
  - PC version: Wean clusters, Cyert Hall
  - Mac version: Hunt Library, Cyert Hall

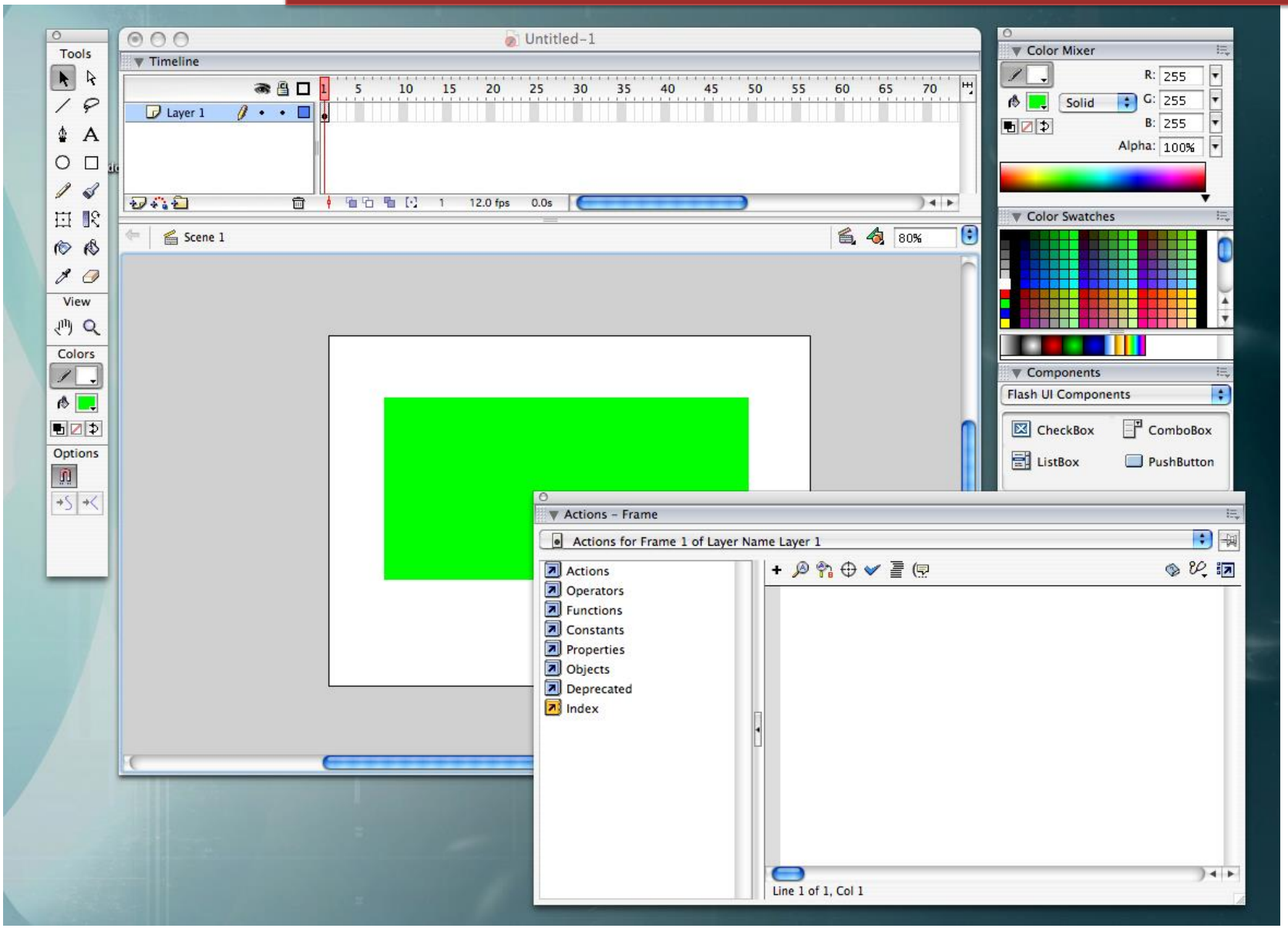


A Beginner's Book

- *Foundation Macromedia Flash MX*
  - Kris Besley
- Comes highly recommended on Amazon
- ~$10 paperback on Amazon and Half.com
- Not a reference, but a very detailed introduction for people unfamiliar with Flash

VB.NET vs. Flash MX

- VB is great for **form-based** applications
  - Flash is great for **time-based** applications
- Both VB and Flash are event-based.


Tools
View
Colors
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Untitled-1
Timeline
Layer 1
Scene 1
80%
Color Mixer
R: 255
G: 255
B: 255
Alpha: 100%
Solid
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CheckBox
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Actions
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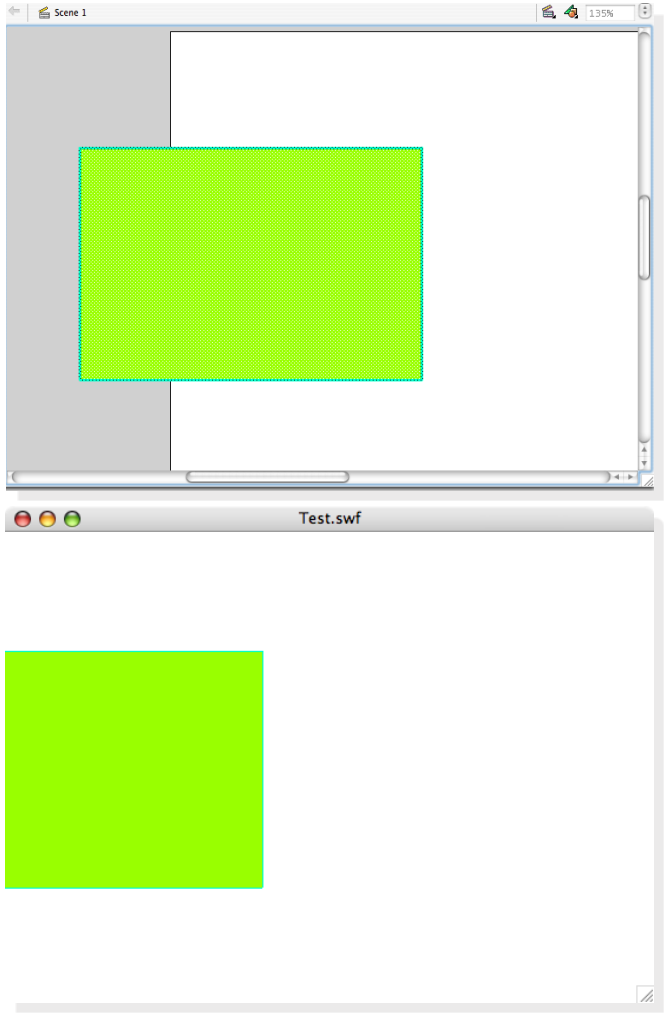
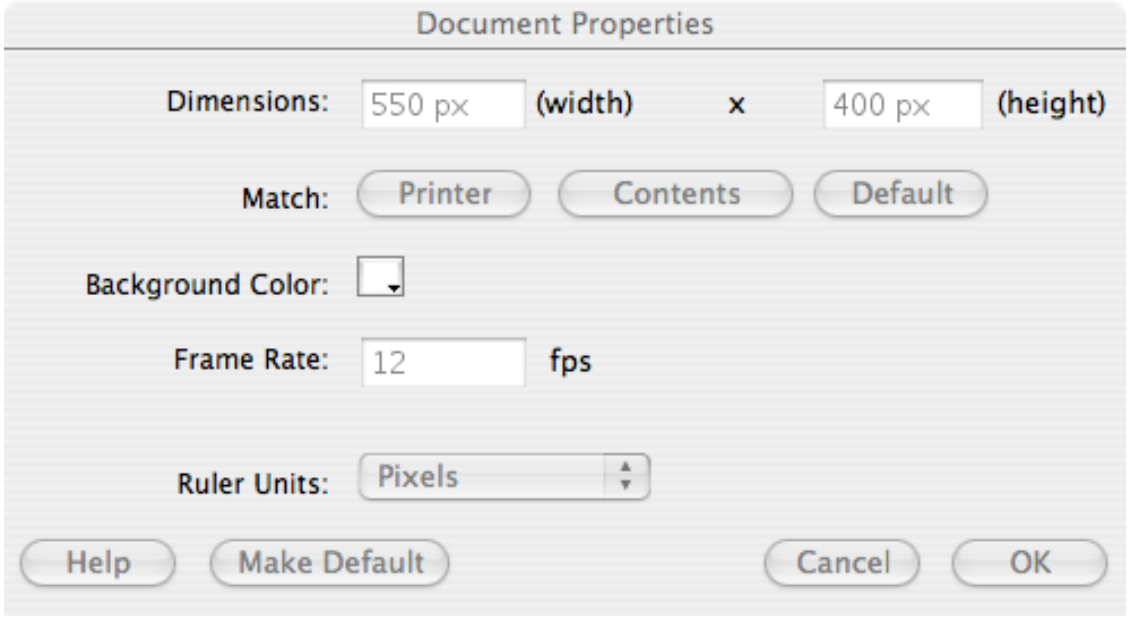
The Stage

- Contains the objects, images, drawings, buttons, etc.
- Where drawings are created, modified, deleted, etc.
- Things can go outside the stage, but they are clipped when the movie is played.



The Stage

- Modify the stage size, background color, frames per second, ruler units, etc. by going to:
  - **Modify ➔ Document...**

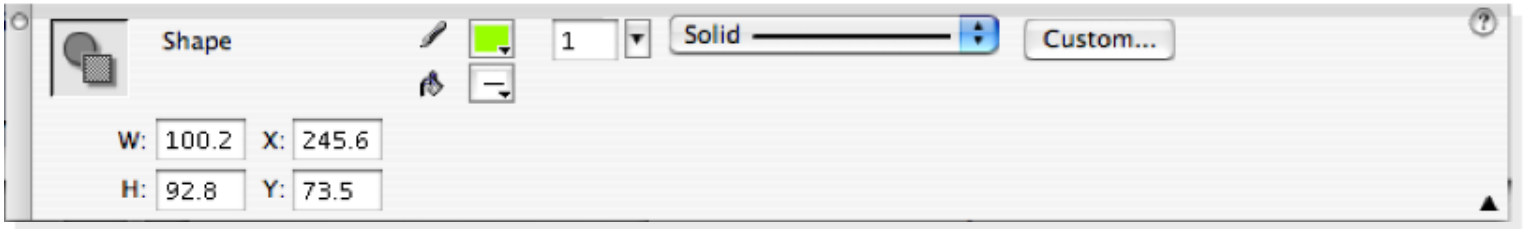


Vector Graphics

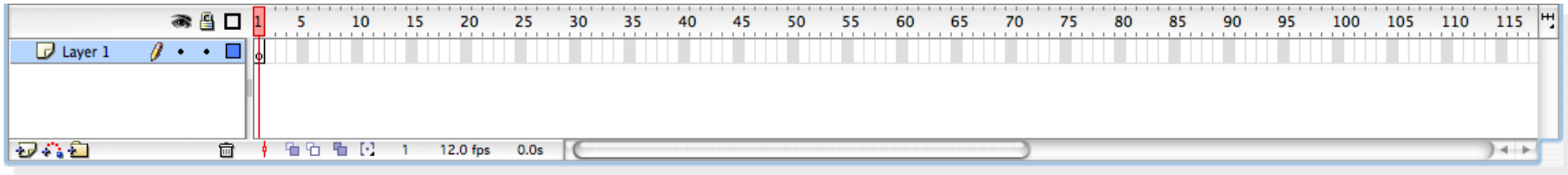
All shapes in Flash are made out of points, lines, and curves. Even this one:

Vector Graphics

- Because shapes are made out of points, Flash
  - Snaps objects' edges together
  - Snaps objects' points to each other
- All shapes have an outline and fill color, a line pattern, and a stroke thickness
  - These can be changed in the property window

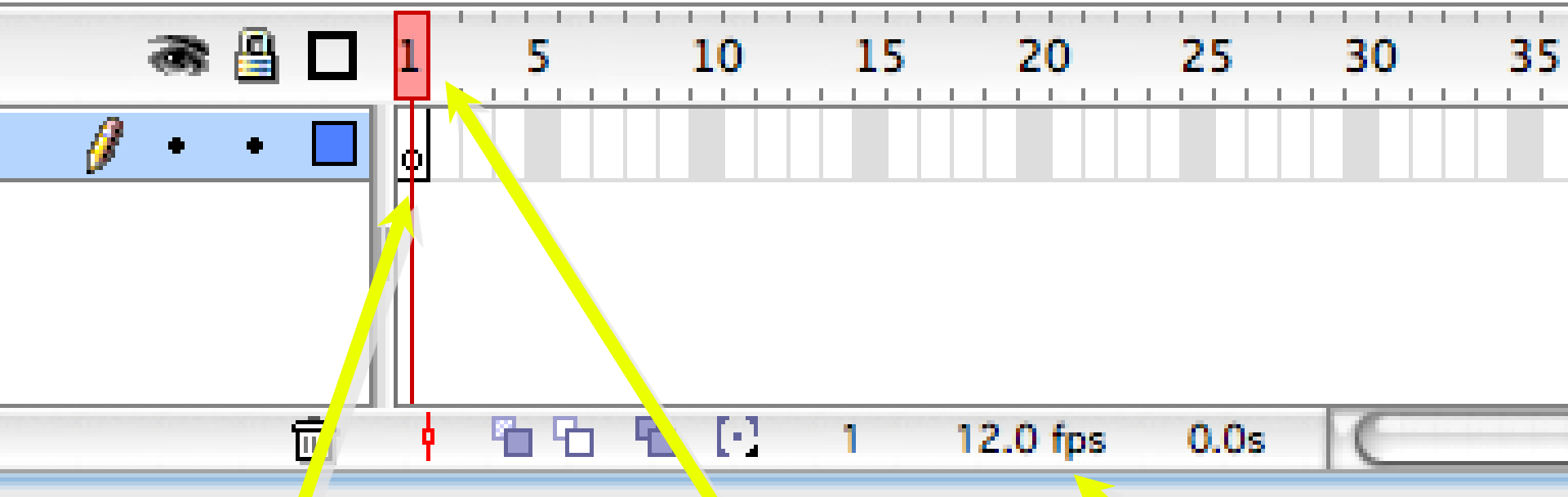


The Timeline



- A view of all of the **frames** and **layers** in your **movie**
- Of course, most Flash-based media is interactive, so its not *exactly* a movie.

Frames

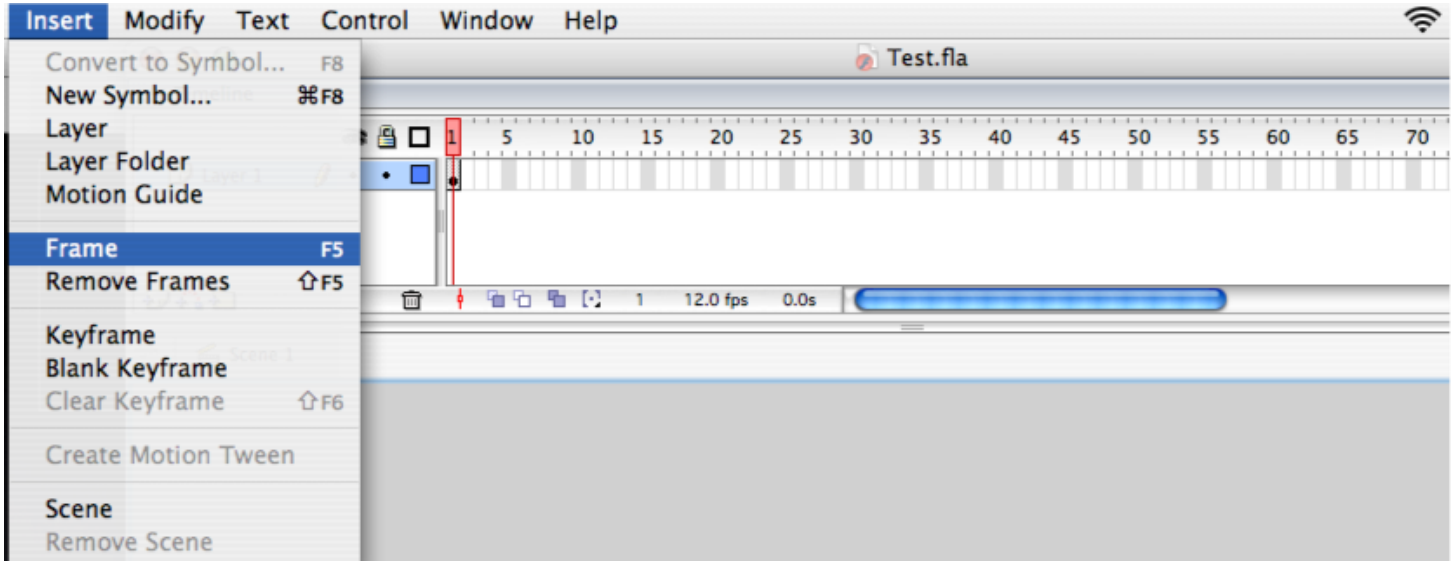


This is a **frame**

Frame 1 is currently selected

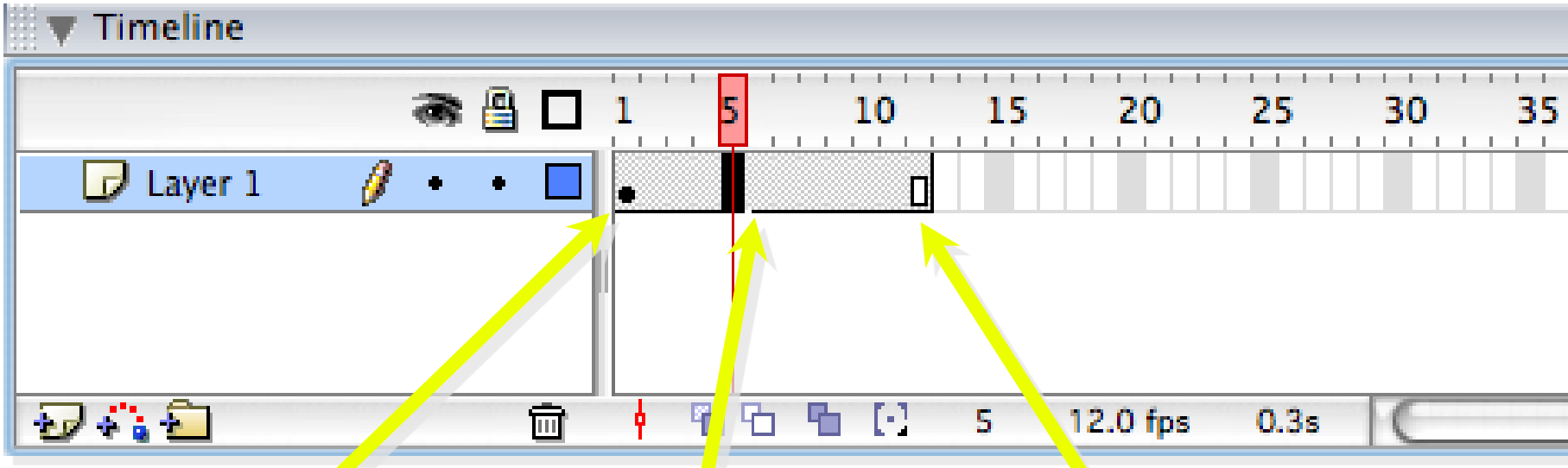
This movie shows 12 **frames per second**

Frames



- Use the **insert** menu to insert and remove frames.
- We'll insert 11 frames

Frames



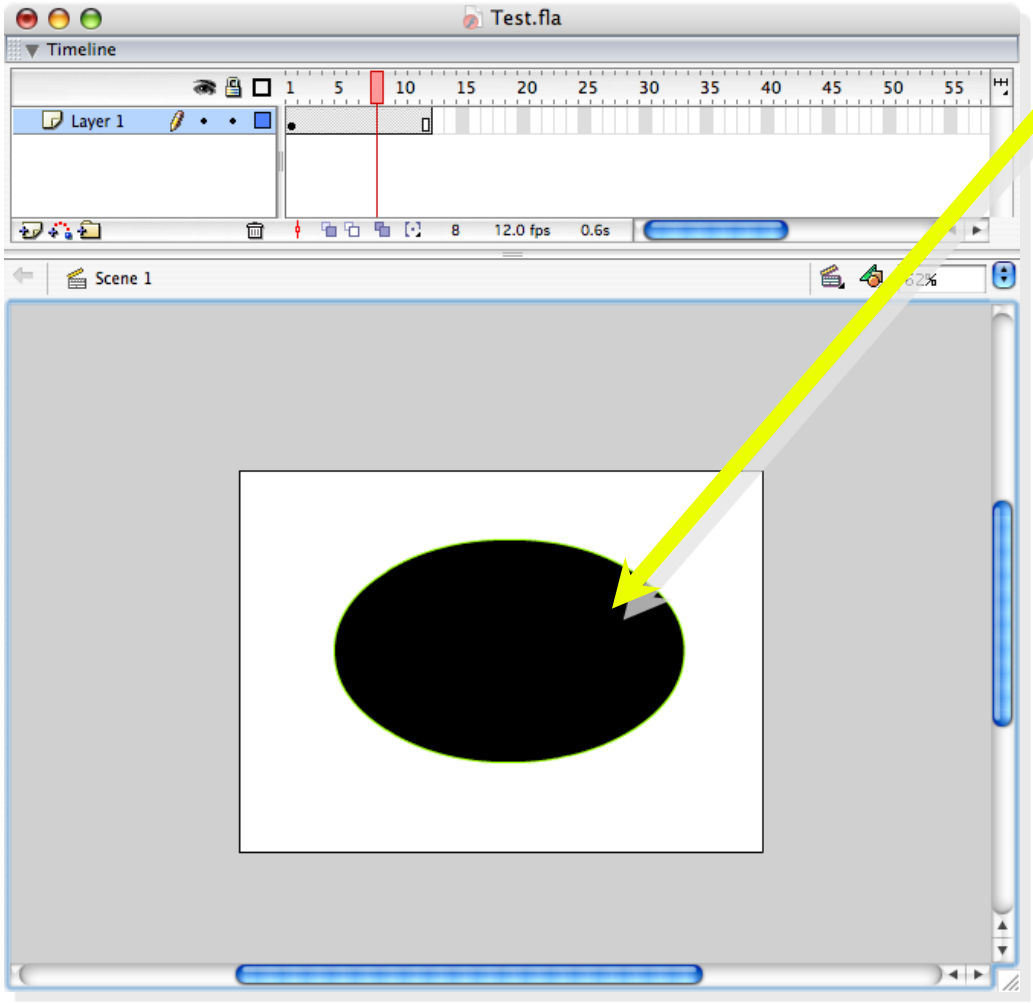
The black dot means that frame 1 is a **keyframe**

The grey frames 2-12 have the same content as the frame 1, the keyframe

The hollow white rectangle means that it is the end of the span of frames.

*A keyframes defines the content of **all frames following it**, up until the **next** keyframe.*

Frames



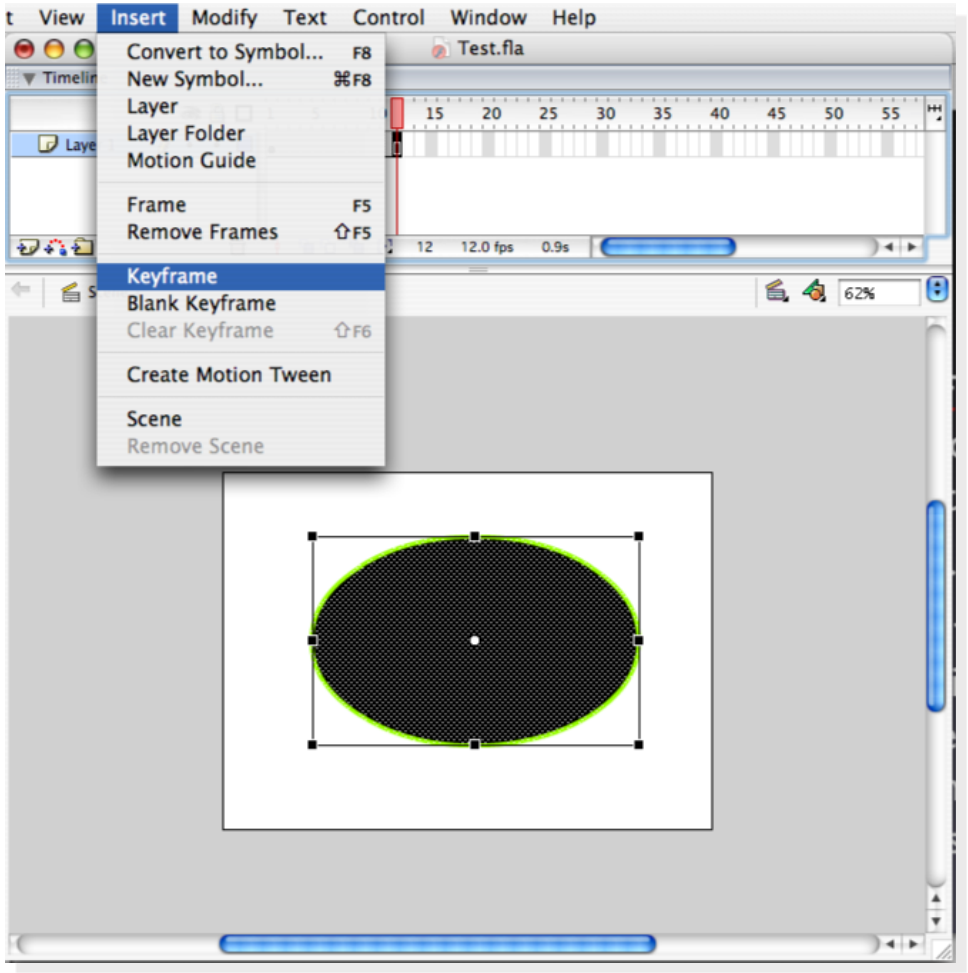
Frame 1, a keyframe, has a black oval on the stage.

All of the *grey* frames following it have the same black oval as frame 1.

The last frame that with the black oval is frame 12, represented by the white rectangle.

This movie will show this black oval for 12 frames (1 second) and then loop.

Frames



If we want to change what the *13th* frame displays, we "insert a keyframe"

Inserting actually just changes the selected frame to a keyframe.

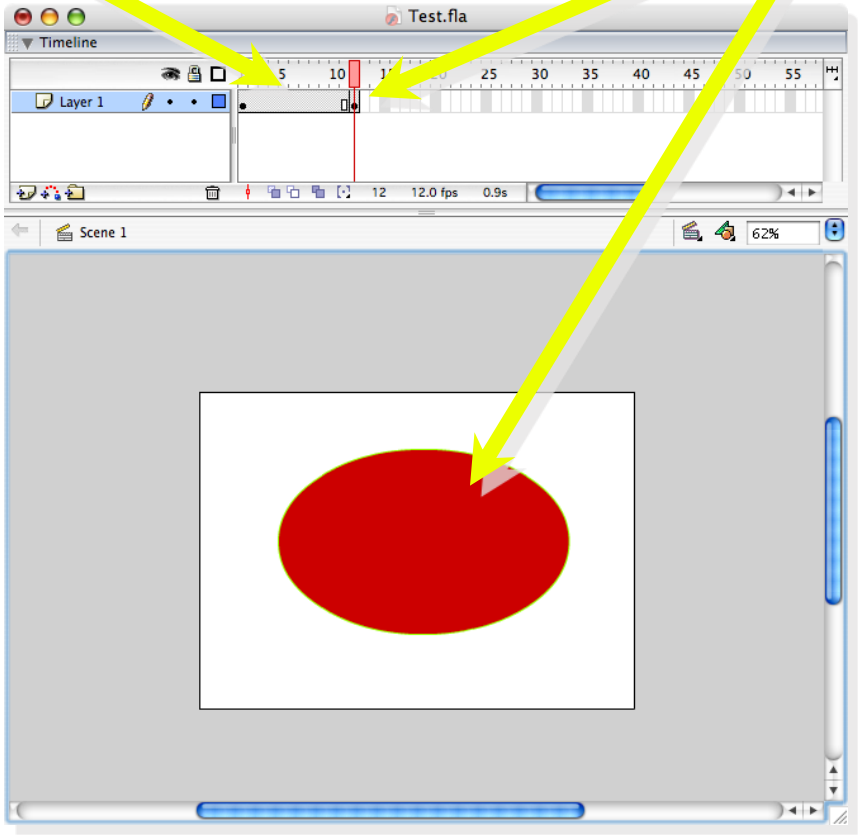
This **copies** the previous keyframe's contents.

We can then change the contents of the *new* keyframe.

Frames

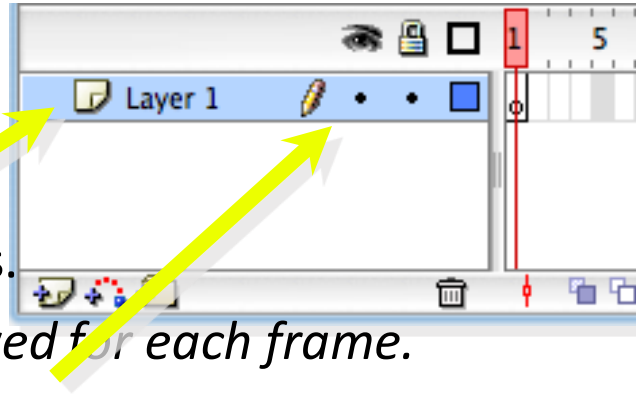
Now, the first 12 frames have a black oval.

The 13th frame has a red oval of the same size.

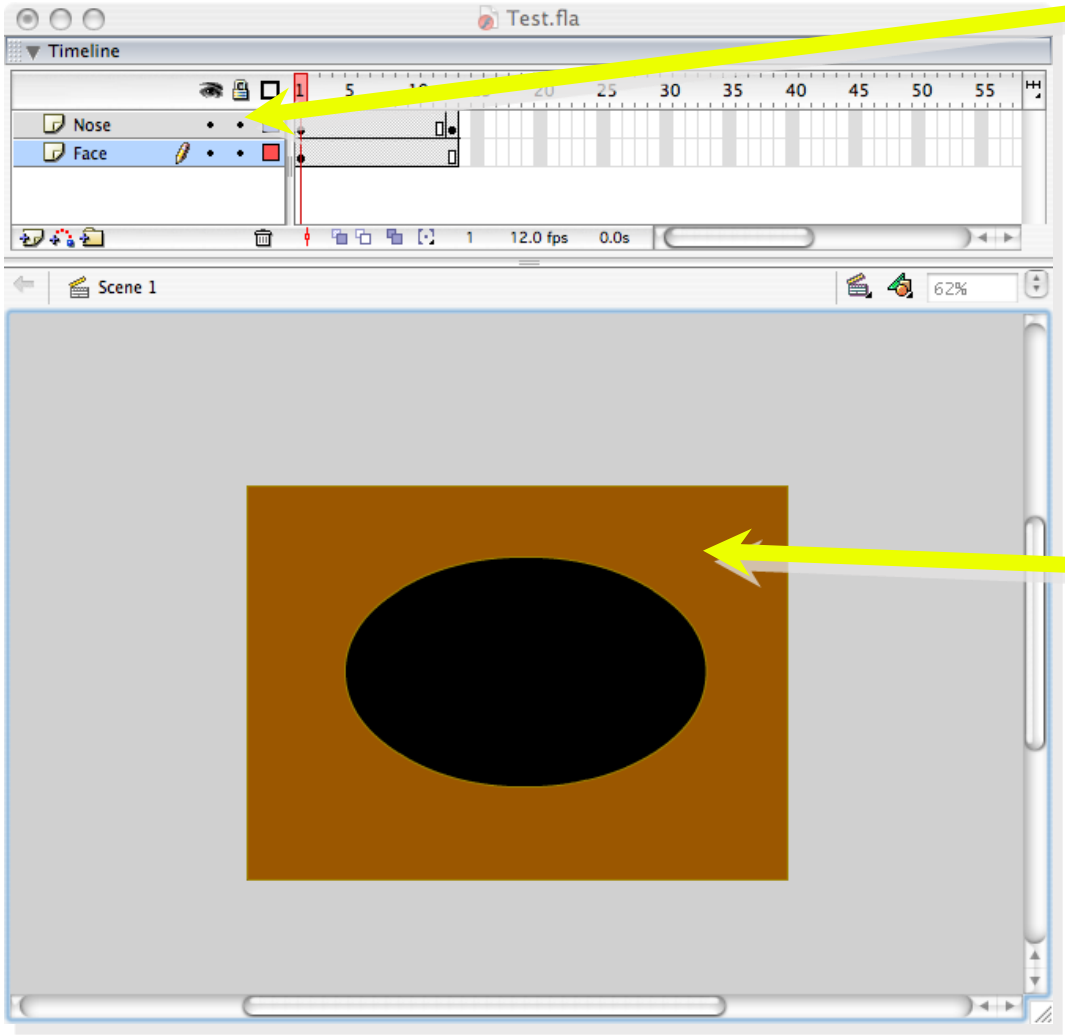


Layers

- Just like Illustrator and other applications, Flash supports **layers** of content.
- The layers are part of the timeline.
- Layers can be locked, hidden, and organized in folders.
- *Layers determine the order in which content is displayed for each frame.*



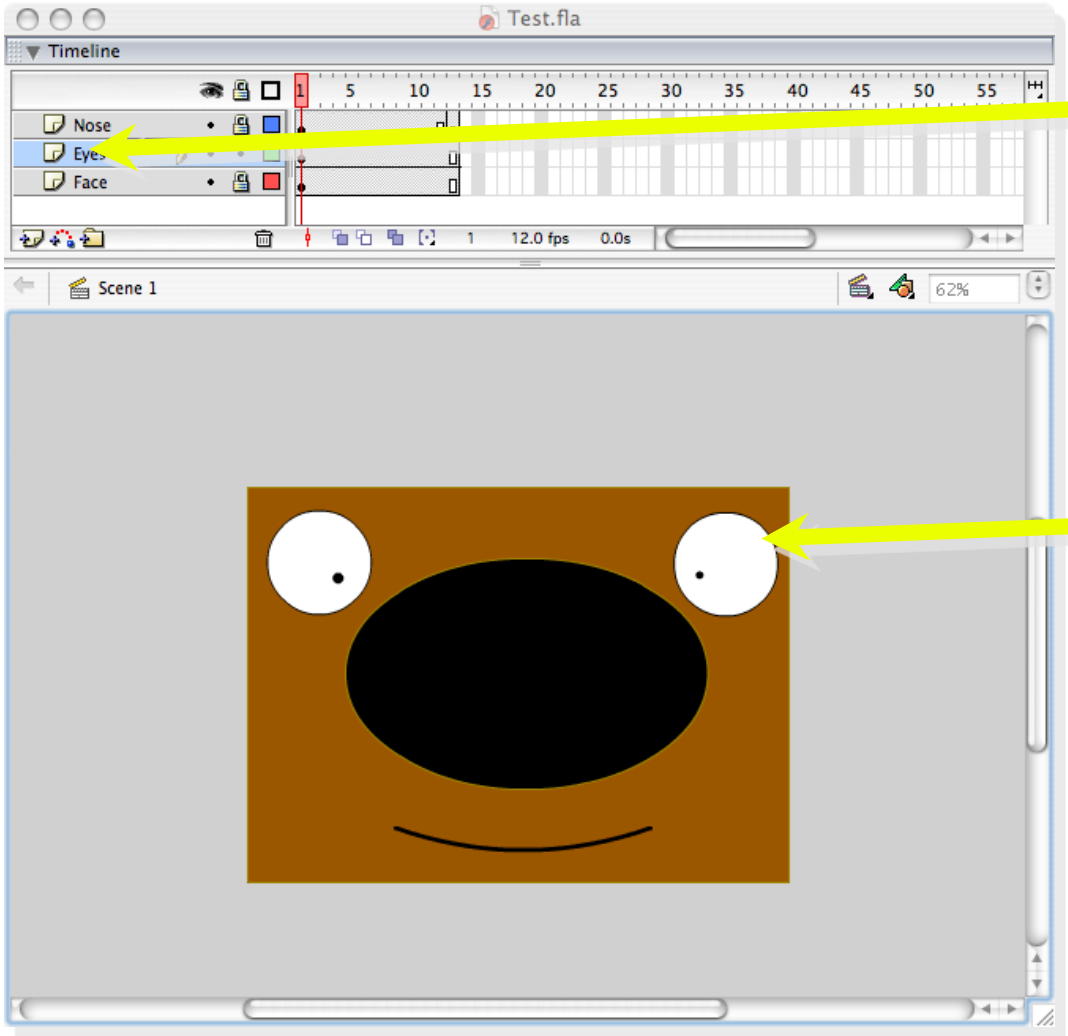
Layers



Here I've renamed **Layer 1** to **Nose** and added a layer called **Face**

Then I drew a brown rectangle on the **Face** layer.

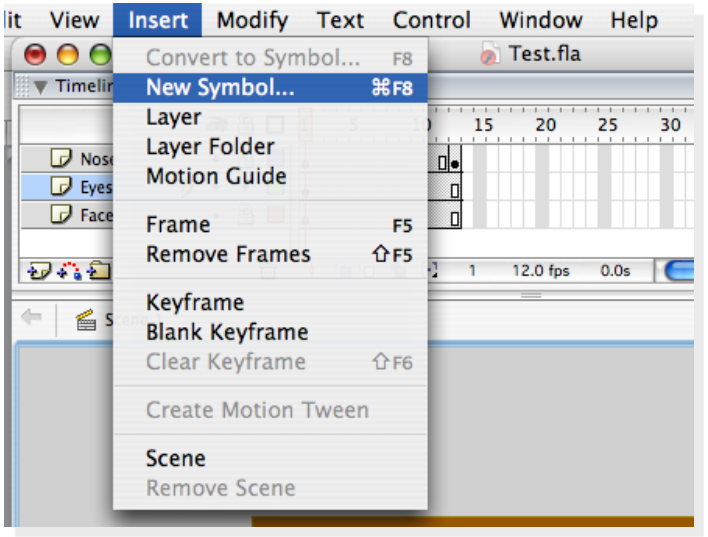
Layers



Then I added an **Eyes** layer, and drew the eyes and mouth.

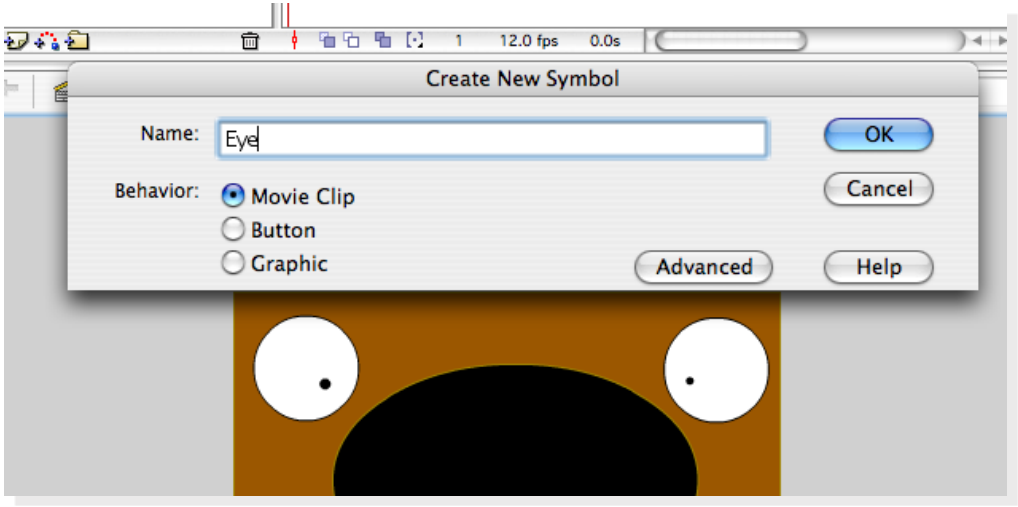
Then I drew a the eyes and the mouth

Symbols



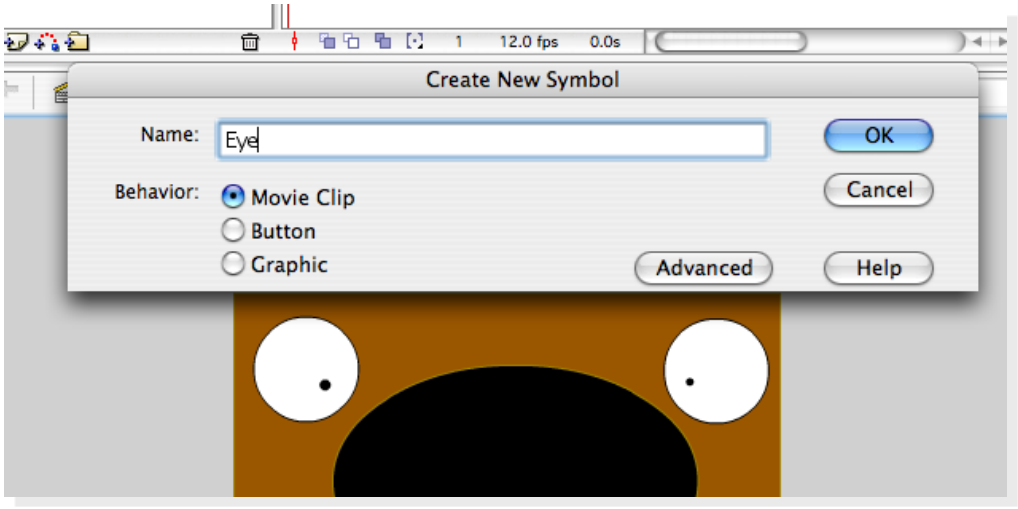
- Symbols are tricky.
- Symbols can also be thought of as a class.
  - A single Button *class* ➔ many Button instances
- Symbols = Separate Timeline + Stage + Layers
  - So they can also be thought of as movies inside of movies.

Types of Symbols



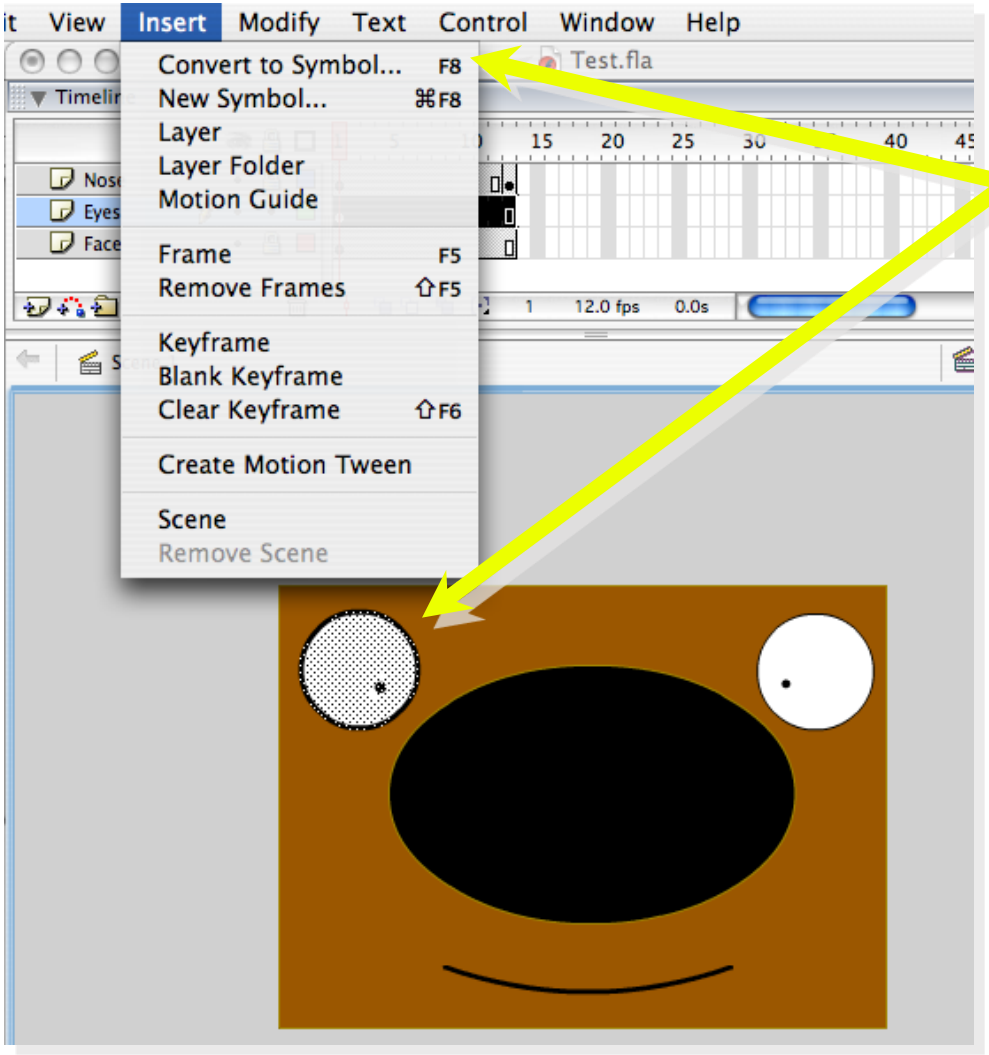
- ***Graphic***
  - Operate in sync with the main movie's timeline. Used for images or reusable animations.
- ***Movie Clip***
  - Movie inside a movie. On their own time, not necessarily in sync with the main timeline.
  - Good for interactive things and sounds.

Types of Symbols



- ***Buttons***
  - Special kind of Movie Clip symbol that responds to clicks, rollovers and other actions.
  - You define the graphics for each of the various button states, and then assign particular actions to an **instance** of a button.

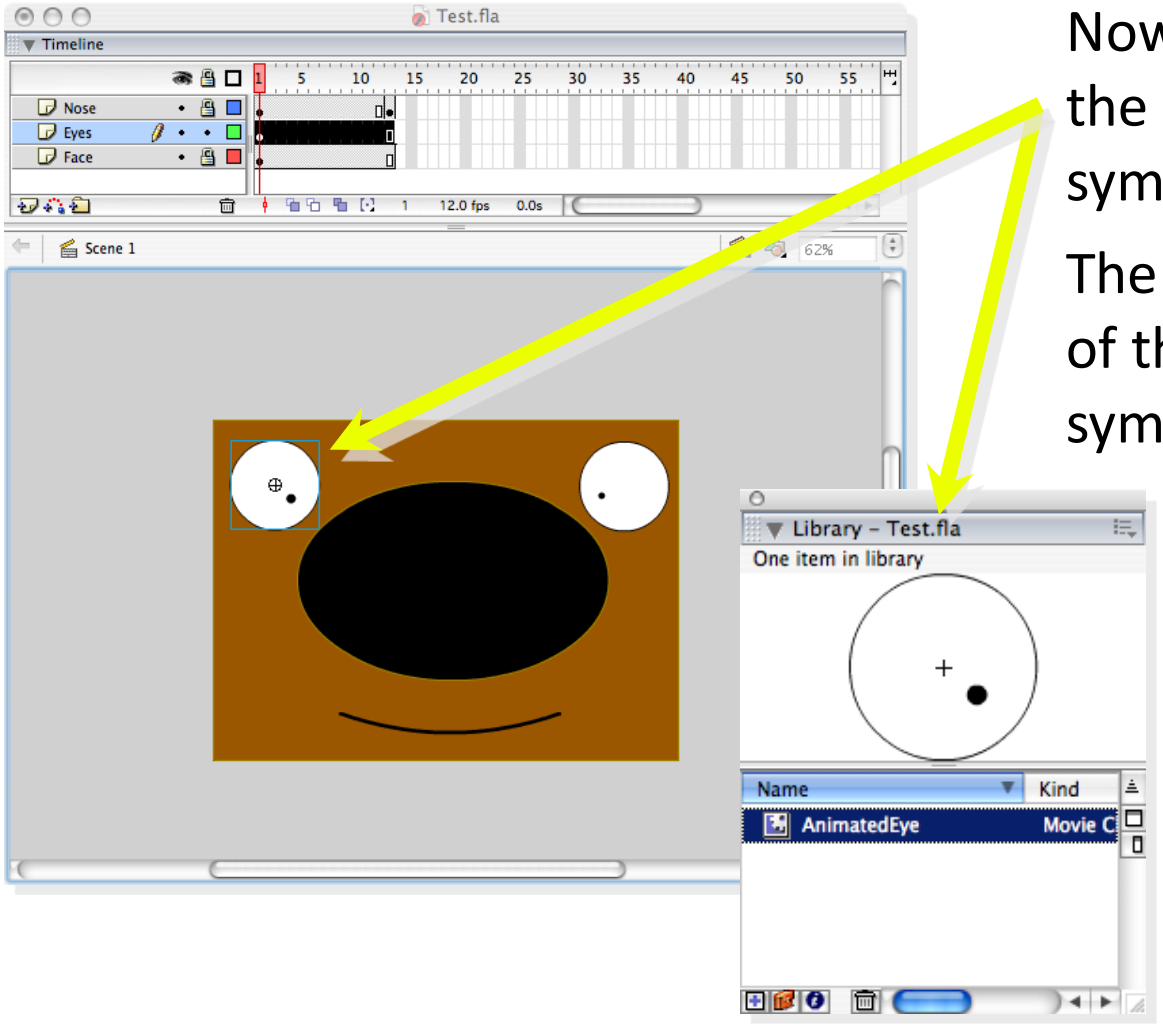
Making a Symbol



You can make a new, blank symbol by going to ***Insert→Insert Symbol...***

Here, we have selected the eye (by locking the nose and face layers and dragging a box around the eye), so the menu says **Convert to Symbol** instead.

The Library

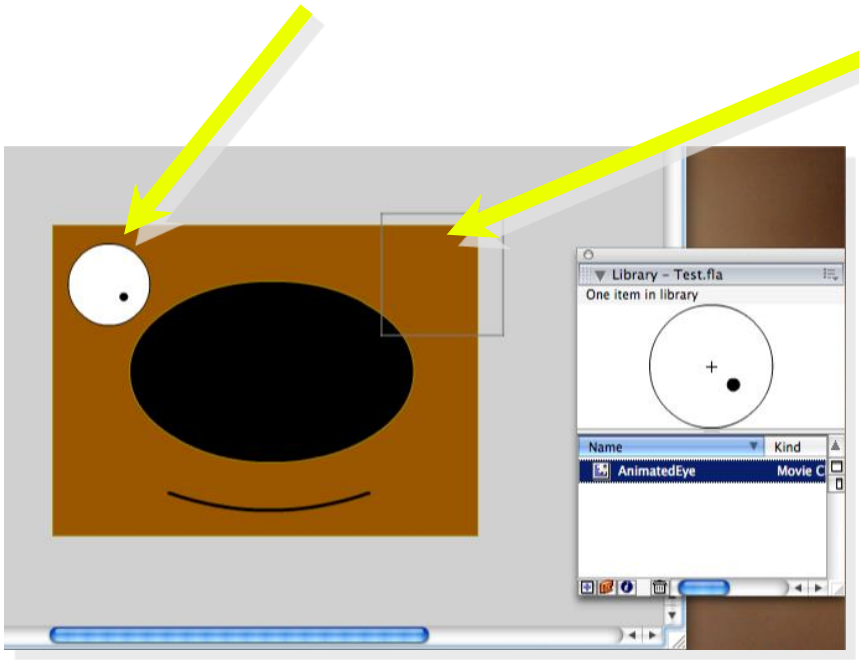


Now, the eye appears in the ***Library*** as a new symbol.

The library contains all of this Flash document's symbols.

An Instance of a Symbol

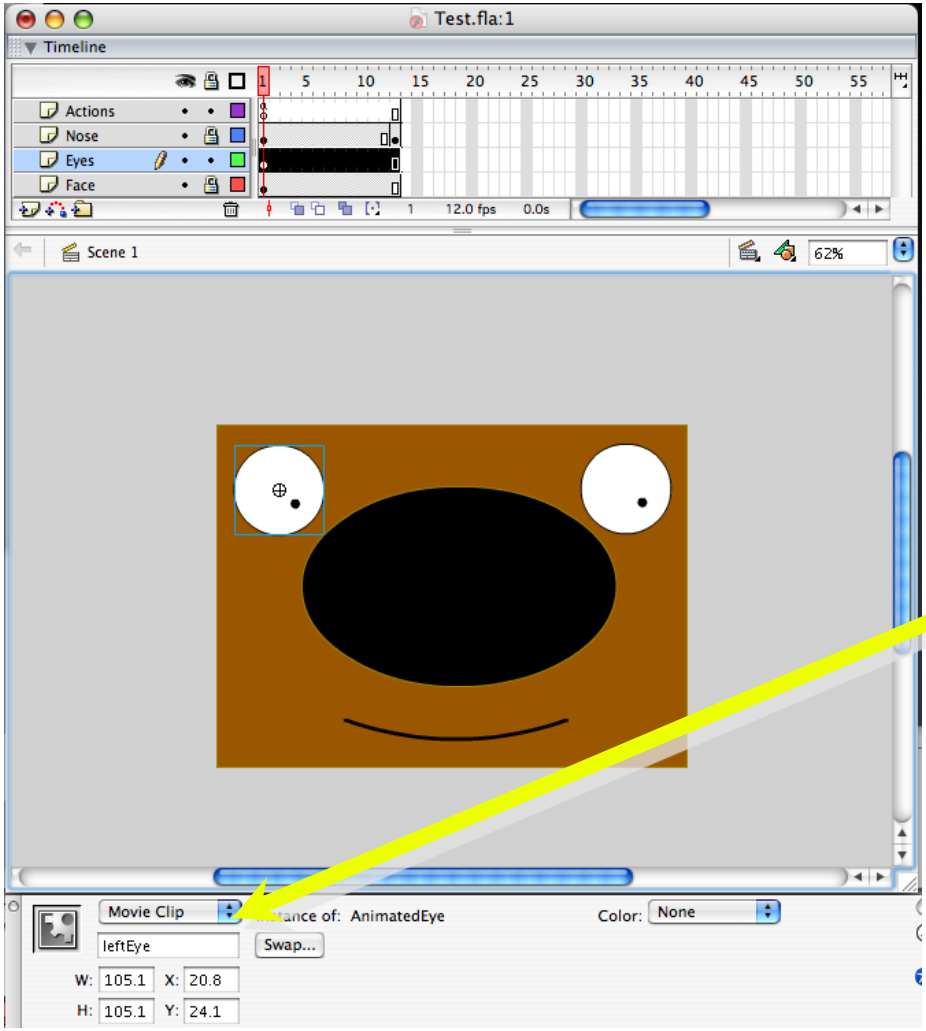
Now, the left eye is an instance of the **AnimatedEye** symbol



After erasing the right eye, we can drag a new instance of the **AnimatedEye** symbol from the library for the right eye.

Now we have two instances of the animated eye symbol, each with their own positions, but sharing the symbol's timeline, layers, etc.

Naming Instances

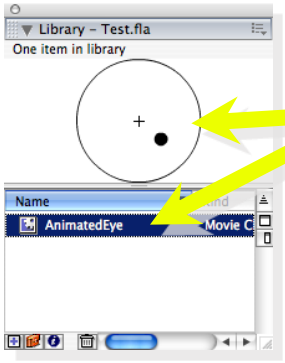


Its important to name an instance if you want to refer to it in code.

We name the left eye **leftEye** by selecting the left eye and changing the instance name in the property window.

We do the same for the right eye.

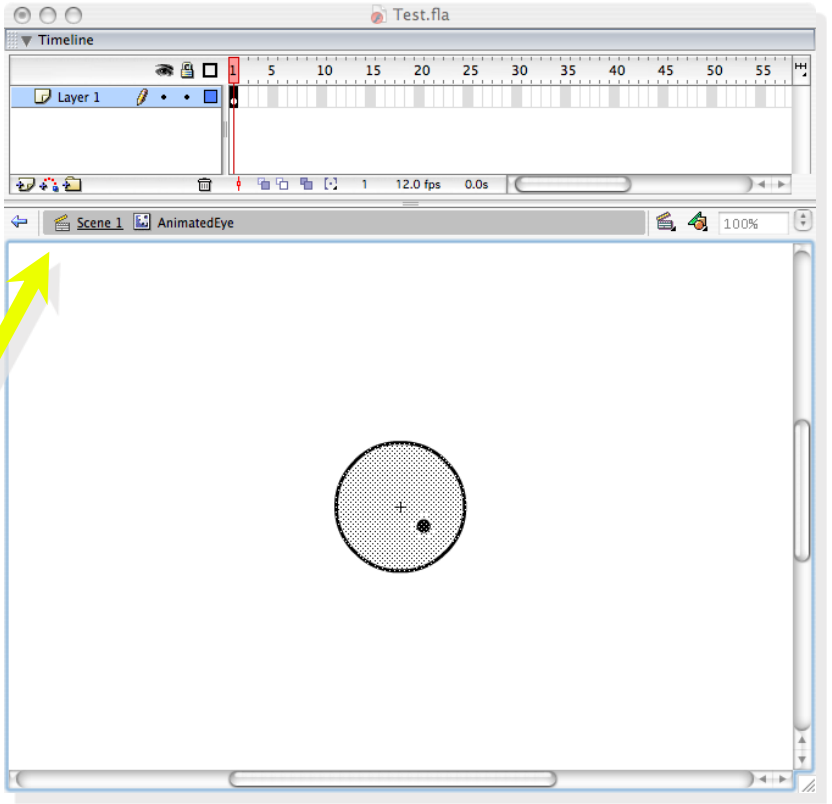
Editing a Symbol



To edit a symbol, double-click on the symbol in the library (either the name or image).

Notice that the timeline, layers, and stage are now specific to the **AnimatedEye** symbol.

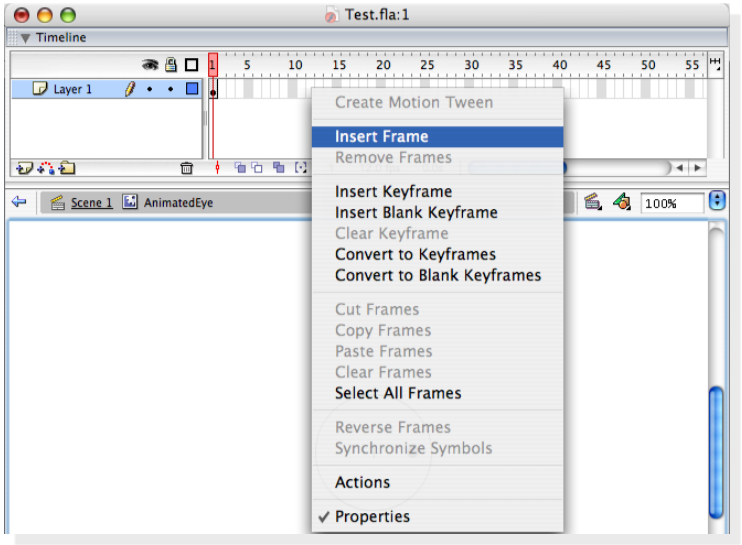
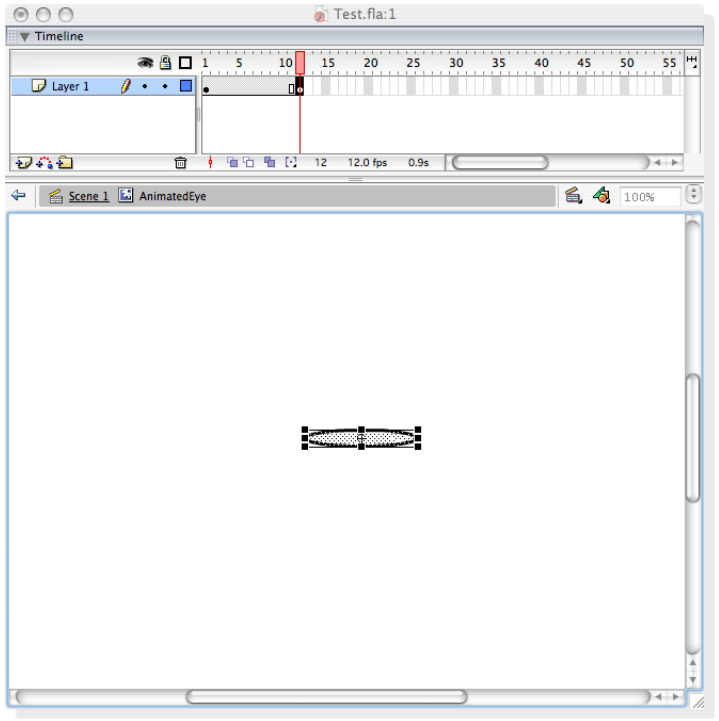
Our view is now *inside* the main scene. You can return to it by clicking here.



Editing a Symbol

Let's make the eyes blink every 1/12th of a second.

If we right-click on the 12th frame in the eye's timeline and select insert frame, it inserts frames in between.



Then we make a keyframe, and change the eye so that it is blinking.