Flash 101

2D CG Animation

For Television Broadcast

Flash - The Basics

Chapter 1

Getting to Know Your Flash MX 2004

Eric Pringle

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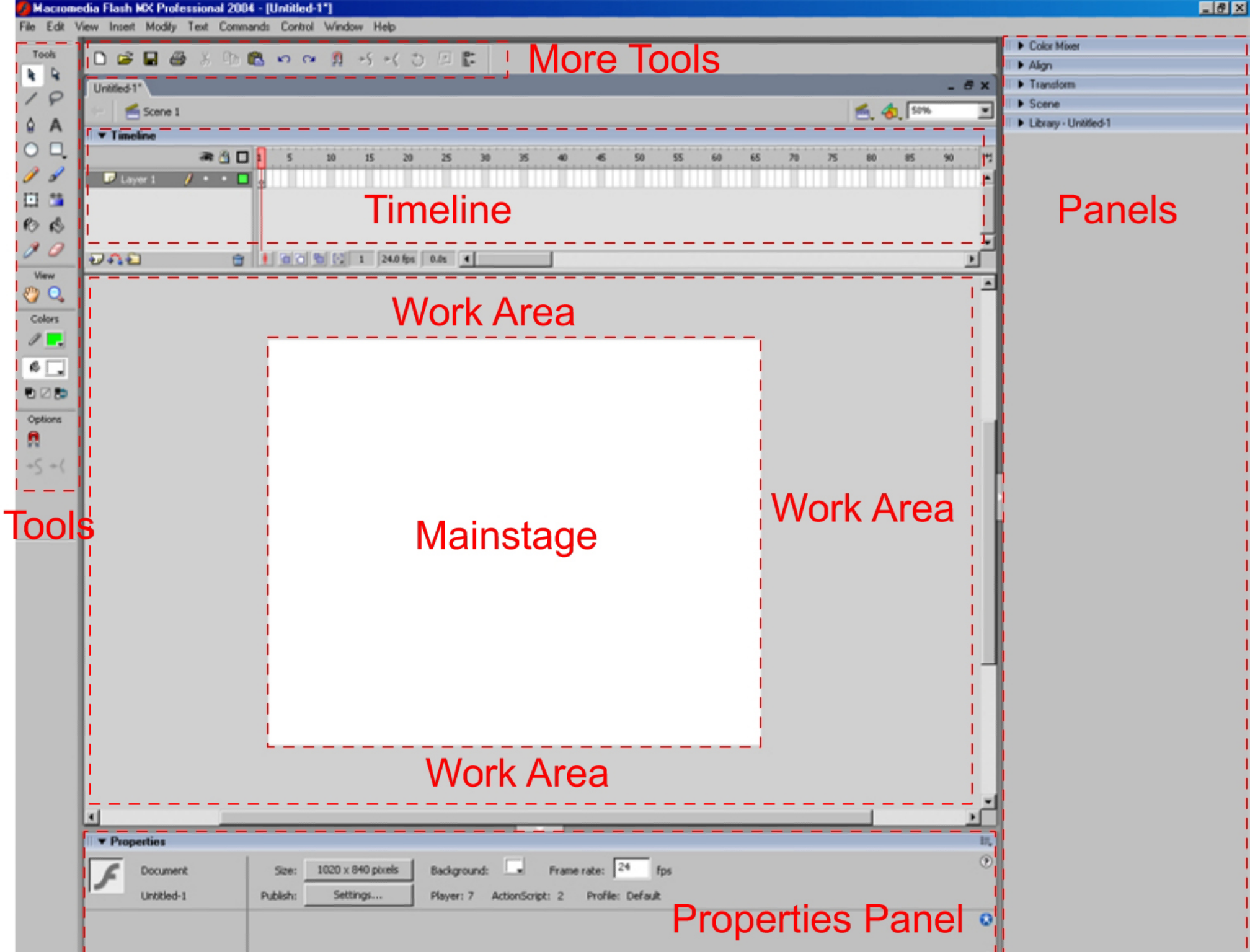
Macromedia Flash MX Professional 2004 - [Untitled-1*]
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Untitled-1*
Scene 1
Timeline
Layer 1
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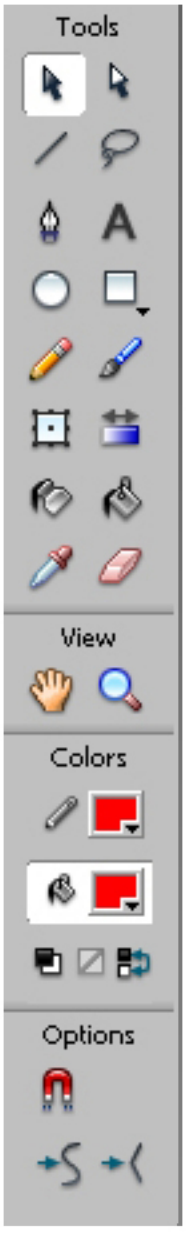
Tools



Black Arrow (V or Ctrl)
"Selection Tool" moves stuff around

Line Tool (N)
makes lines, good for color separation

Pen Tool (P)
just like in Illustrator but more of a headache

Oval (O)
makes circles

Pencil (Y)
makes *line* art

Free Transform (Q)
scale, rotate, skew, edit centers, the good stuff

Ink Bottle (S)
creates a *line* around a *fill*

Eyedropper (I)
identifies color values on fills
(good for alpha levels, that's about it)

Hand (H or Spacebar)
moves around workarea, instead of scrolling

Magnet
makes points snap

Smooth
smooths paths, adds/eliminates points to do so

White Arrow (A)
"Subselection Tool" selects points along a path

Lasso (L)
Selects broken artwork by circling it

Text (T)

Rectangle (R)
makes all sorts of polygons

Brush (B)
makes *fill* art

Fill Transform (F)
adjusts gradients

Paint Bucket (K)
adds a *fill* between a set of *lines*

Eraser (E)
Erases *broken* art

Zoom (M, Z, or Spacebar + Ctrl)
Take a closer look at your stuff with this!
(to zoom out hold down Alt)

Stroke Color
palette of colors for *lines*

Fill Color
palette of colors for *fills*

By holding down the mouse button and dragging it beyond the palette, you are granted with an eyedropper that allows you to select a color from anywhere on your computer desktop

Straighten
straightens paths, adds/eliminates points to do so

The Functions of the Black Arrow

Select Mode
Click and drag to select

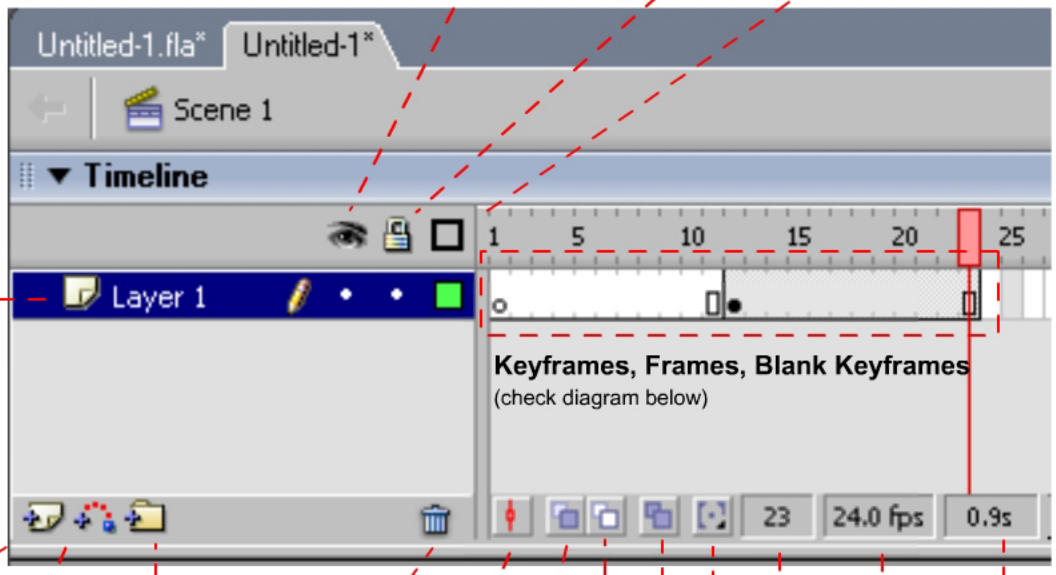
Bendy Mode
Click and Drag to bend a path between two points

Point Mode
Click and Drag on a point to move it

Move Mode
Click and Drag to move artwork

Duplicate Mode
Hold Alt, Click and Drag to copy selection

Timeline



Fla Tab
Toggles between multiple open flash files

Show/Hide
Allows you to hide layers

Lock/Unlock
Allows you to lock layers

Outline
Allows you to view a layer in line work

Layer
use these to keep symbols separated. The layer on top is the closest to the camera.

Keyframes, Frames, Blank Keyframes
(check diagram below)

Add New Layer

Add Motion Guide Layer

Insert Layer Folder

Delete Layer

I Have No Idea
Honestly, I have never used this

Onion Skin
Allows you to view frames before and after the cursor

Onion Skin Outlines
Allows you to view frames before and after the cursor in outline form

Edit Multiple Frames
Allows you to select frames across the timeline.

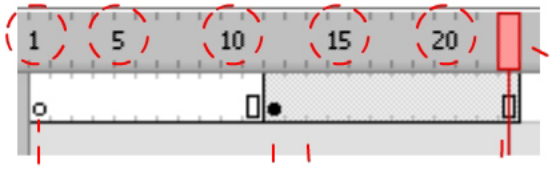
MOM
pg.6

Current Frame
The frame number that the cursor is on

Frame Rate
Shows how slow your file is playing

Elapsed Time

Frame Numbers



Cursor
marks the frame you are viewing

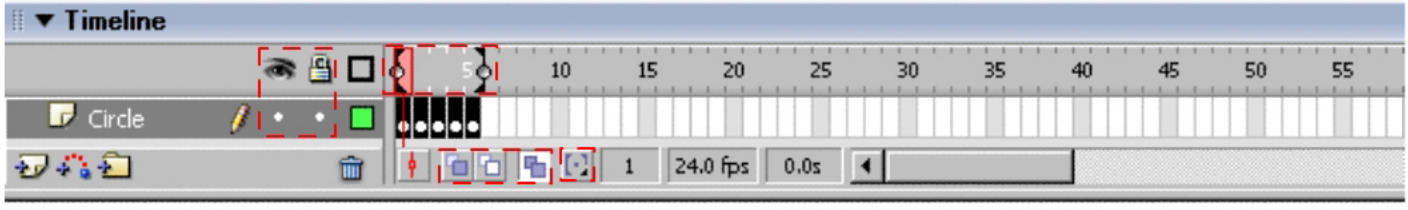
Blank Keyframe (F7)
a frame with no artwork. Insert a blank keyframe to delete artwork for the remainder of the timeline or until the next keyframe

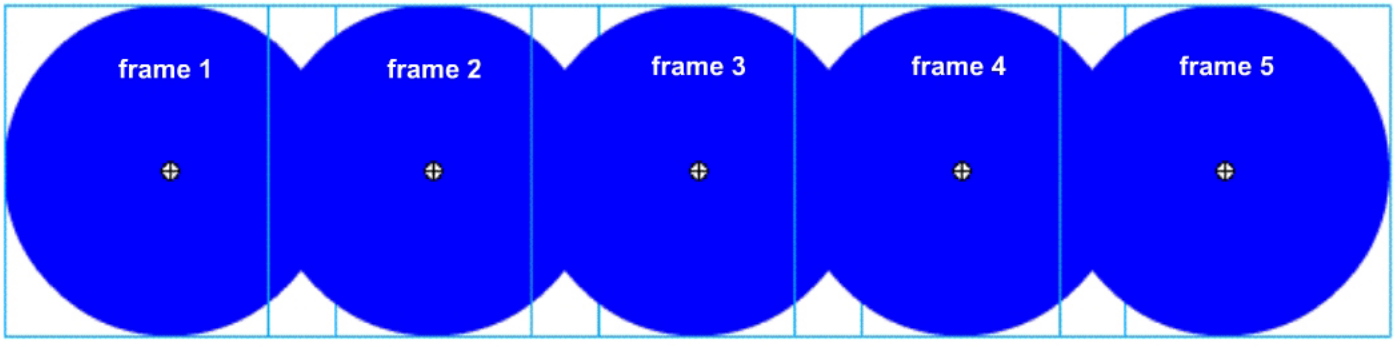
Frames (F5)
Insert frames to create time between two keyframes. To remove frames hold Shift+F5

Keyframe (F6)
Insert a Keyframe on the layer whenever artwork is to be repositioned. To remove a keyframe hold Shift+F6

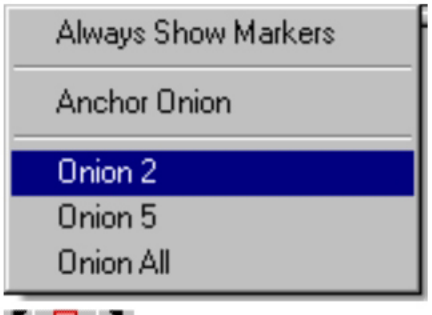
Editing Multiple Frames

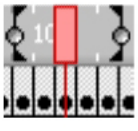
By clicking on the onion skin buttons allow you to view and manipulate multiple keyframes at once. Upon clicking any of the three buttons, two markers will appear above the layers in the frame number section. These markers indicate which keyframes are being viewed at once. Simply adjust these markers by clicking and dragging them or by using the **Modify Onion Markers** (MOM) drop-down menu which has default marker settings that are somewhat helpful. The only setting I use in the MOM drop-down is the **Onion All**, which sets the markers on both ends of the timeline which is very conveinient on lengthy scenes. If you do not want to select keyframes on some of the layers, you can either **Hide** or **Lock** the layers by clicking on the dots under the **Eye icon** (Hide) or under the **Lock icon** (Lock) next to the layer name. This will prevent you from selecting everything on the timeline.



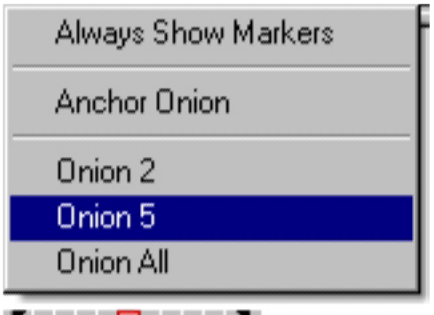


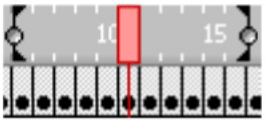
Modify Onion Markers
click here to get to the drop-down menu.



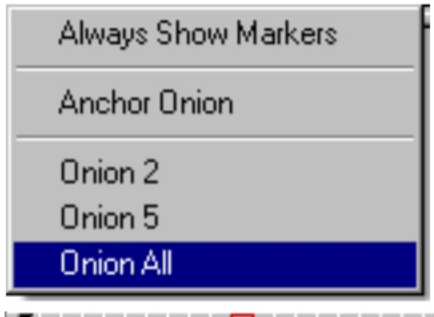


Onion 2
this setting will place the marker 2 frames before the cursor and 2 frames after the cursor.

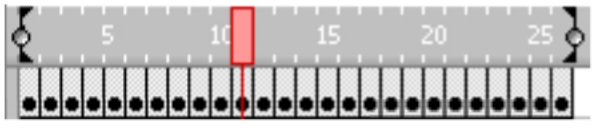




Onion 5
this setting will place the marker 5 frames before the cursor and 5 frames after the cursor.



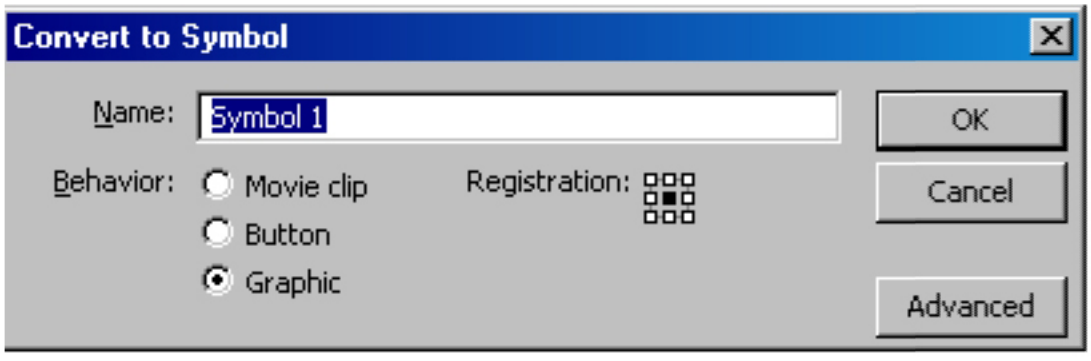
Onion All
this setting will place the markers at the beginning and the end of the the timeline.

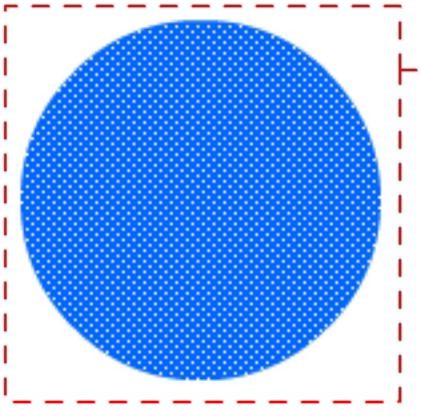


Always Show Markers and Anchor Onion don't really help me much, so I won't bother to explain.

Symbols

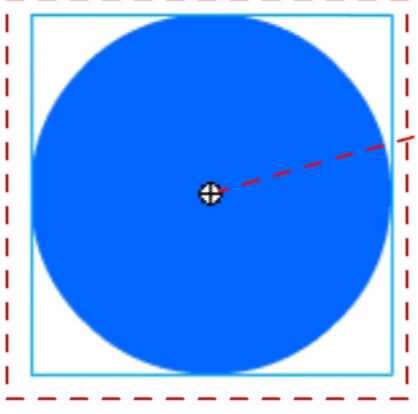
Any object that moves has to be symbolized before animation. Symbols can nest many levels of animated sequences. This can be very helpfull when setting up heads with full mouth and eye charts, or arms and legs with a series of frames animating from straight to bent poses. First, select the object , then press F8 to Convert to Symbol. A window will pop up asking to name the symbol and to set other preferrences. Set the behavior on "Graphic" and set the Registration to the square in the center, now click OK. Now each time a symbol is made, it will automatically have these preferrences set. However you will still need to name the symbol.





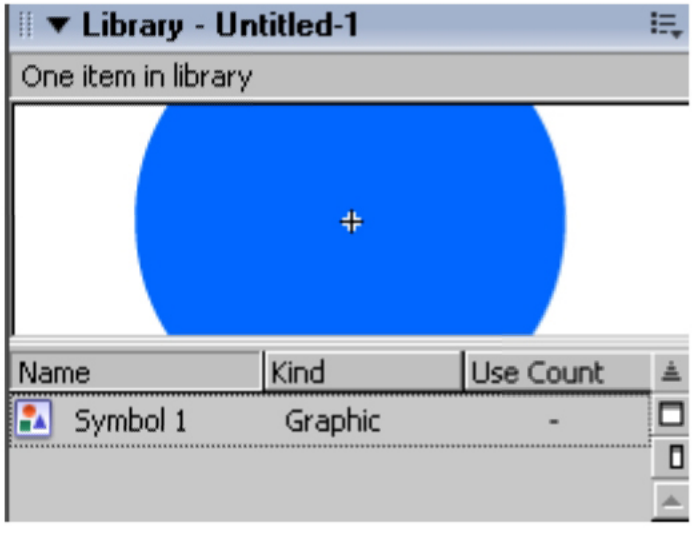
Selected Object (Raw Art)

Once symbolized, the object is no longer "broken" raw art. The object is now surounded by a blue box and added to the fla library. In the center is a white dot, this is the edit point, the most important part of a symbol. Before any animation is started the edit point must be adjusted to the axis of rotation or the joint (like an elbow or knee). If the edit point is not adjusted it can lead to hours of frustration in the longrun. To adjust the edit point, select the Free Transform Tool (Q), this will able you to move it to the desired position. For any reason you need the edit point to return to its natural position, simply double click on the little crosshairs on the symbol while the Free Transform Tool is selected. To break a symbol hold down Ctrl+B.



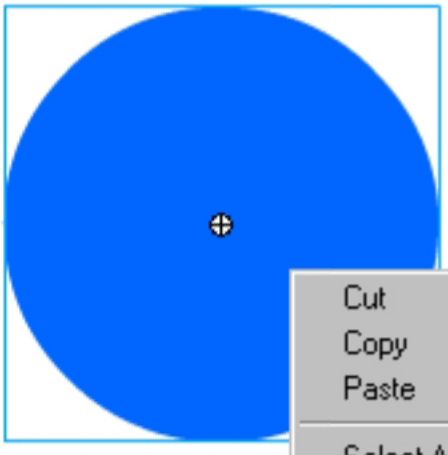
Edit Point

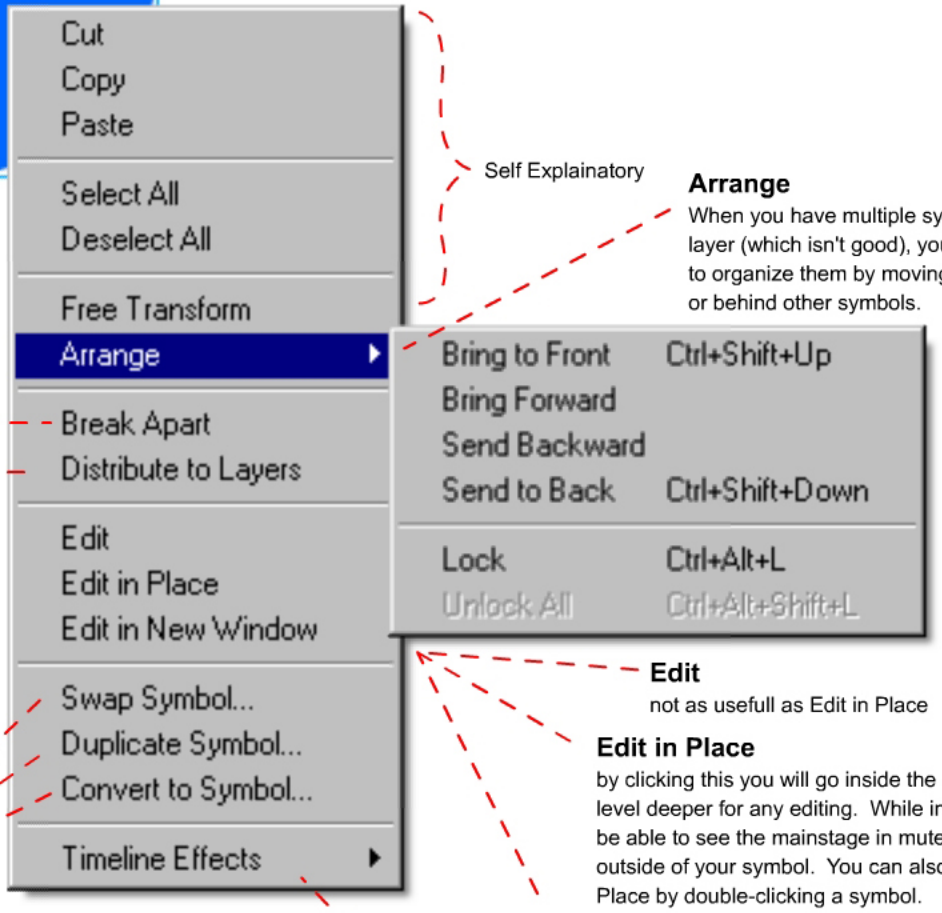
Symbolized Object



Right-Clicking Symbols

Right-clicking symbols come with a whole lot of goodies, let's have a look!





Self Explainatory

Arrange
When you have multiple symbols on one layer (which isn't good), you can use these to organize them by moving them in front or behind other symbols.

Breaks a symbol into raw art, also Ctrl+B

This feature is a favorite among many because it wasn't available on earlier editions of Flash. When you have multiple symbols all on one layer and you want them each on a separate layer, simply hit this function and it will do just that like magic!

Edit
not as usefull as Edit in Place

Edit in Place
by clicking this you will go inside the symbol one level deeper for any editing. While inside you will be able to see the mainstage in muted colors outside of your symbol. You can also Edit in Place by double-clicking a symbol.

Swap Symbol...
Allows you to swap a symbol with another and it will keep any transformation from the previous symbol, it's pretty neat!

Duplicate Symbol...
Use this if you want to change the artwork in a symbol but do not want to mess up any other animation that uses the same symbol. It makes the old symbol into a new symbol and maintains any previous transformation.

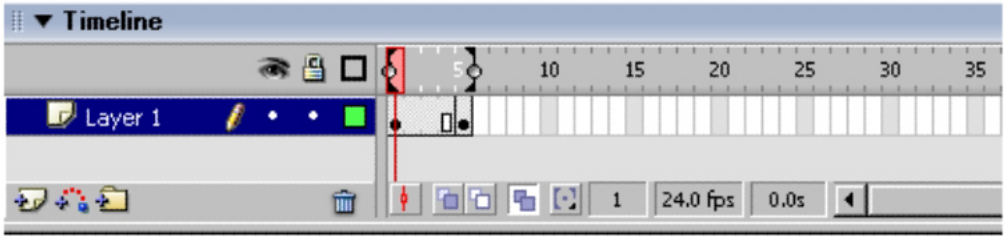
Convert to Symbol...
Same as F8

Edit in New Window
Much like Edit in Place except it will open the symbol in a new flash file. You won't get that muted mainstage as in the Edit in Place, therefore it is also not as usefull.

Timeline Effects
If you ever want to make something really cheap looking use these, they are pretty good for a laugh, that's about it.

Motion Tweens

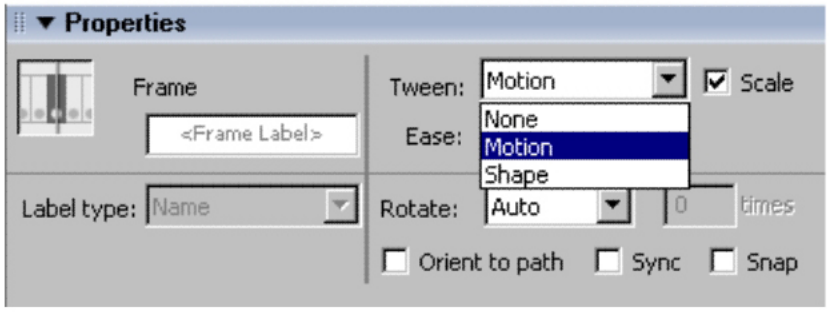
Now that your object is symbolized you can keyframe A & B positions on the mainstage.

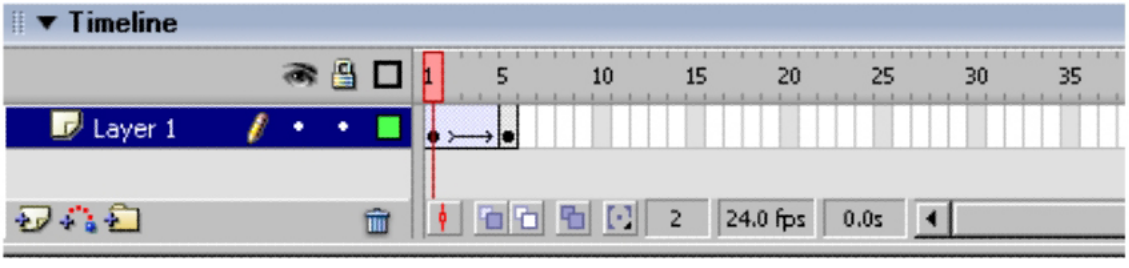


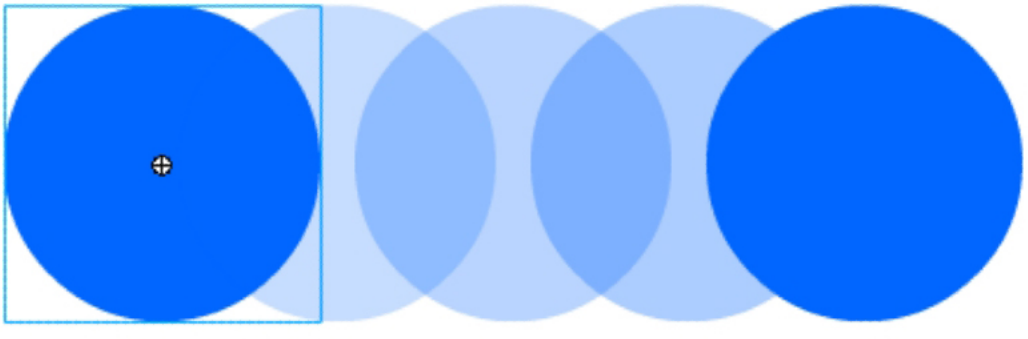
Pose A
Frame 1

Pose B
Frame 5

On Frame 1 we have Pose A and on Frame 5 Pose B. To make the symbol to travel from A to B select a frame between the two keyframes, go to the Properties Panel at the bottom of the screen and where it says "Tween" click on "None" and select "Motion". Now the frames, between the two keyframes, will be blue and have an arrow pointing through them. This means there is a Motion Tween and the two poses have been automatically inbetweened. Motion Tweens only work on symbolized objects on individual layers (one symbol for each layer).

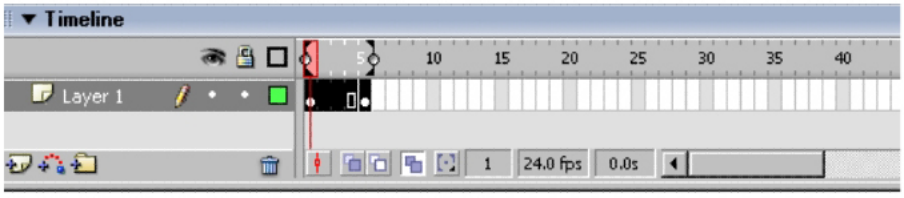


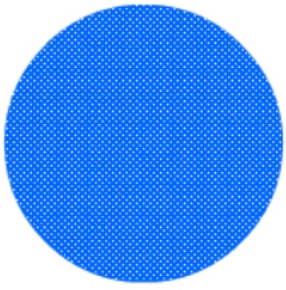




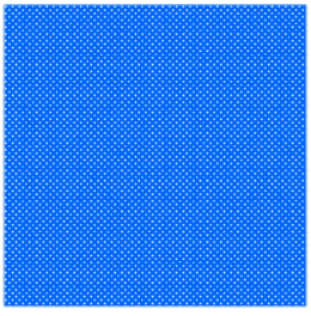
Shape Tweens

Here is a Shape Tween, they can be quite tricky and can even corrupt files, so please be patient when using them.



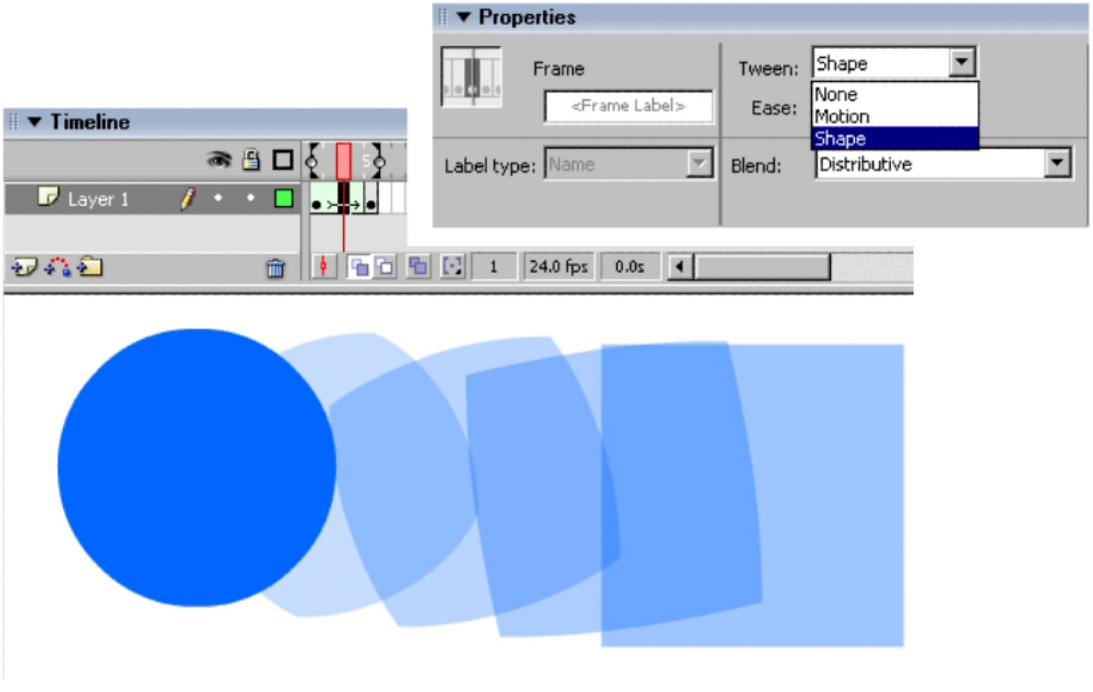


Pose A
Frame 1



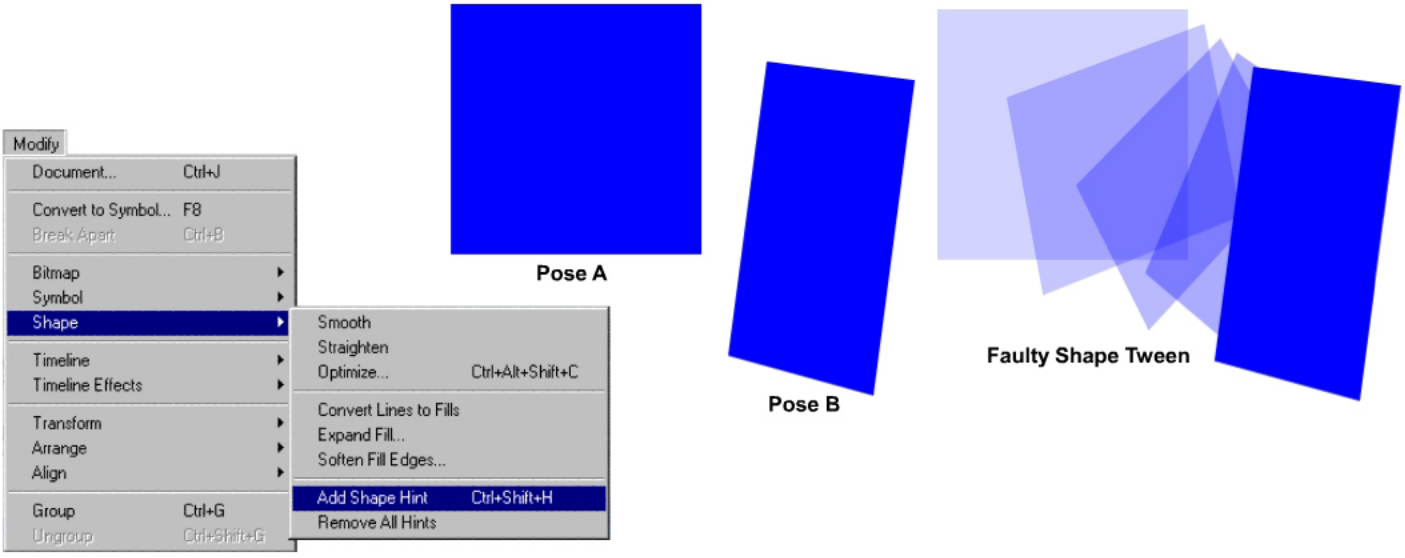
Pose B
Frame 5

On Frame 1 we have Pose A and on Frame 5 Pose B. Note: these two shapes are not symbolized. To make the circle to morph into a square from A to B select a frame between the two keyframes, go to the Properties Panel at the bottom of the screen and where it says "Tween" click on "None" and select "Shape". Now the frames, between the two keyframes, will be green and have an arrow pointing through them. This means there is a Shape Tween and the two poses have been automatically inbetweened. Shape Tweens only work on raw artwork on individual layers. Most of the time the two shapes will not morph right and you will have to add Shape Hints to help out the transition.

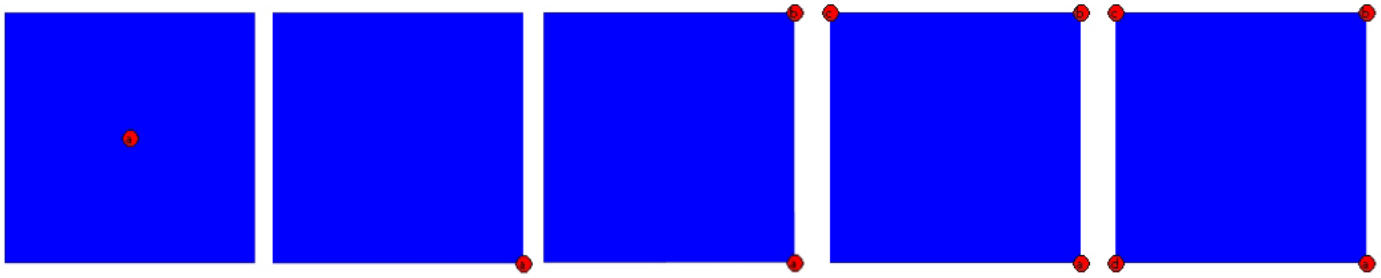


Shape Hints

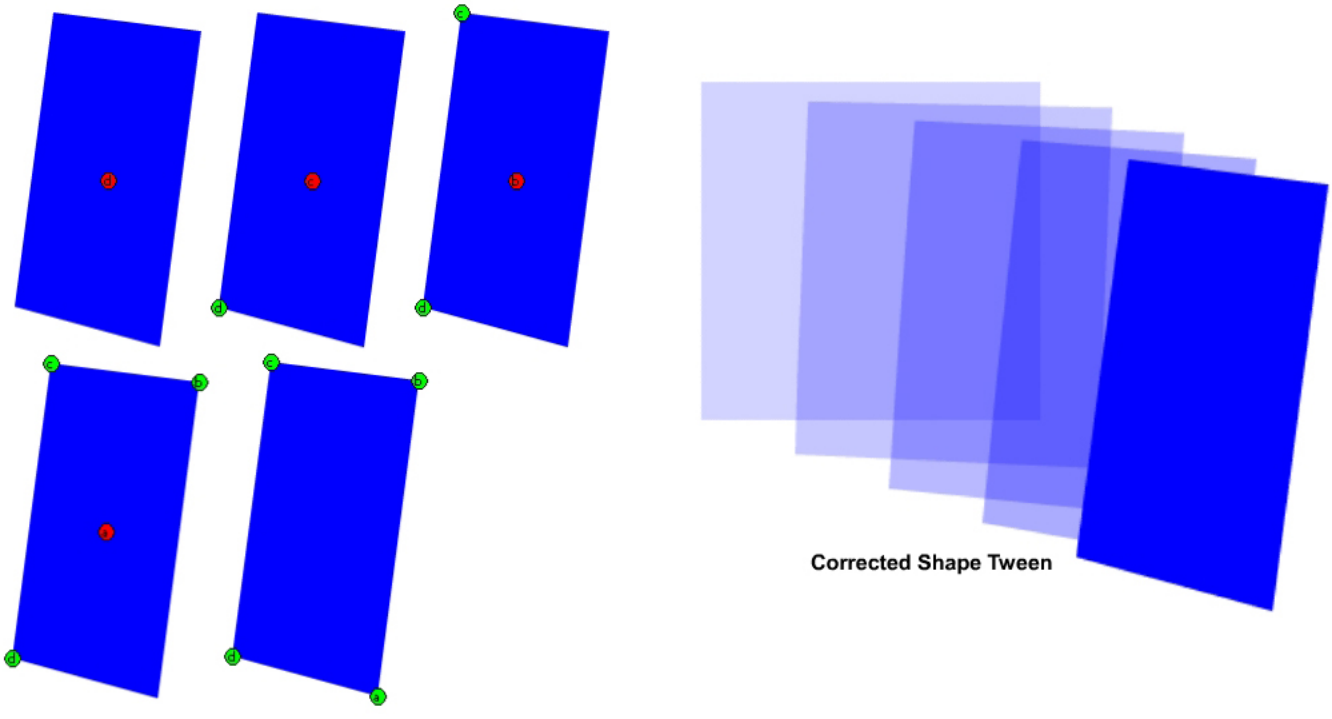
Shape Hints are special little indicators that correct the transition of a faulty Shape Tween, which is too common. 26 Shape Hints can be used at a time, marked alphabetically A-Z. To add a Shape Hint click on the first keyframe of the tween and go to **Modify>Shape>Add Shape Hint**.



When you first add a Shape Hint it might disappear. Don't be alarmed, it's just an annoying Flash bug. To see that Shape Hint again, simply go to **View>Show Shape Hints** in the menu bar. With the Shape Hint 'A' in sight, directly in the center of the shape, click and drag it to a point on the shape. For the best results, I start at the lower right-hand corner and work my way around in order counterclockwise.

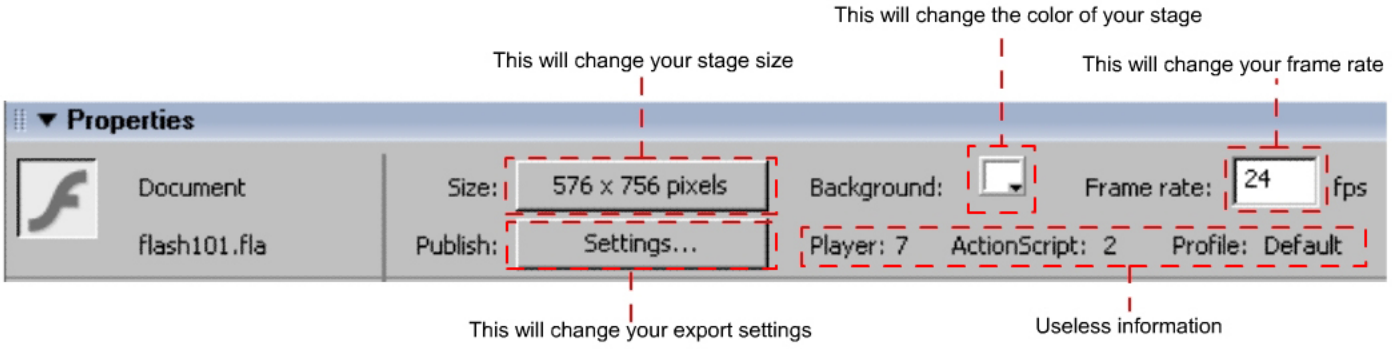


After Shape Hinting the first pose, apply Shape Hints to the second pose. You must match the hints on the same points, otherwise the tween will not work and I will make fun of you. When you go to the last pose of the Shape Tween, you should find all of the hints in the center of the shape. The hints should also change colors from red to green once applied to the appropriate points on the second pose.



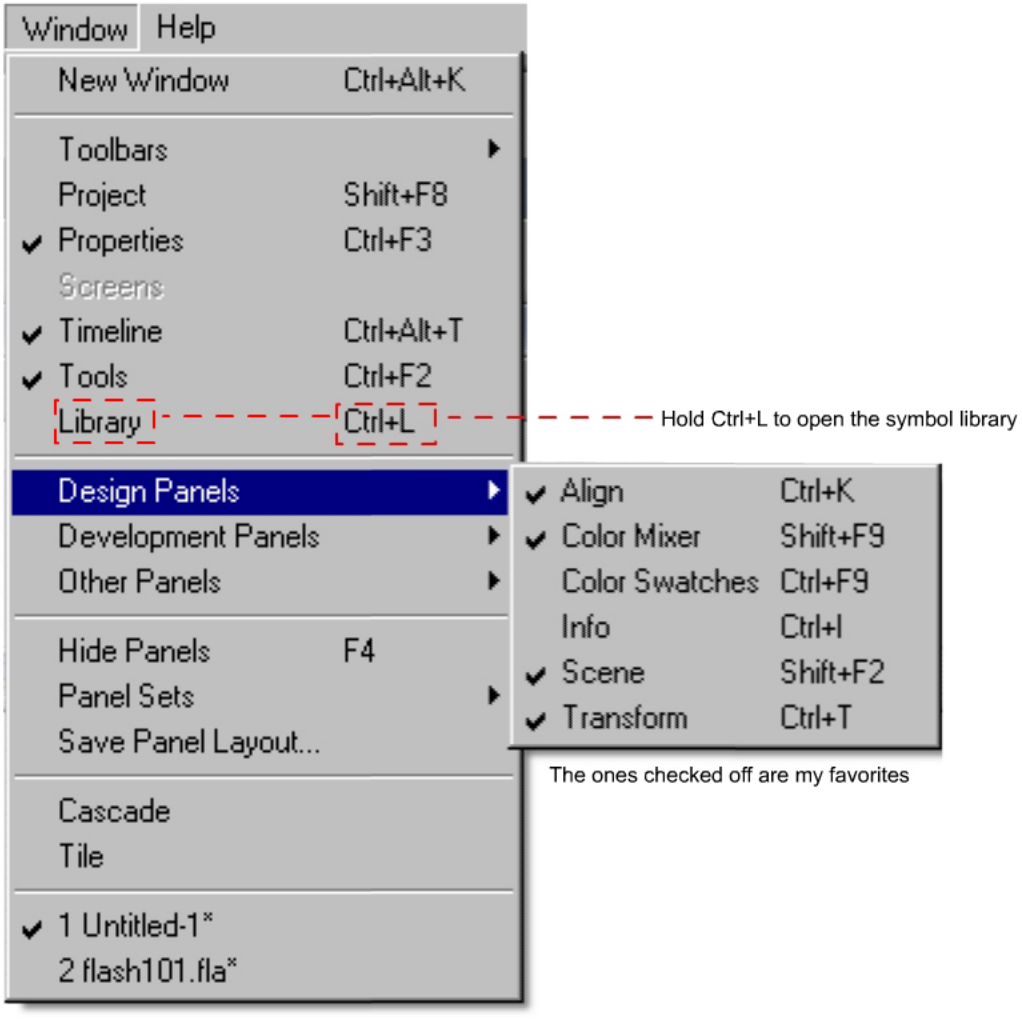
Document Settings

To edit the document settings: stage size, color, frames per seconds (fps); click anywhere on the mainstage for Document Setting options to appear in the Properties panel.

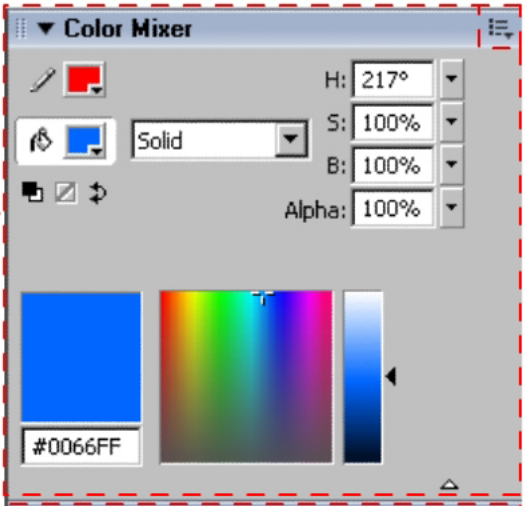


Design Panels

Design panels are really helpfull to have open at all times when working in Flash. To open the necessary Design Panels go to Window>Design Panels and bingo!

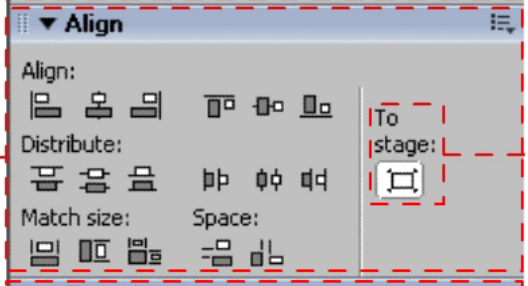


Design Panels



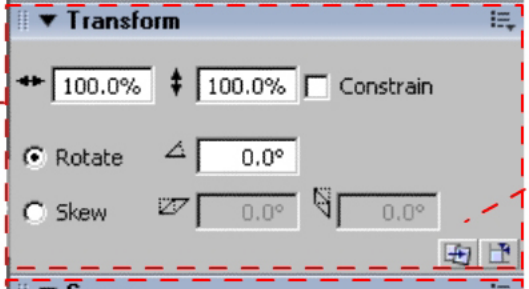
Color Mixer
Use this panel to get colors.

Click here to switch from RGB to HSB (Hue, Saturation, Brightness)



Align
Use these to line up symbols on the mainstage

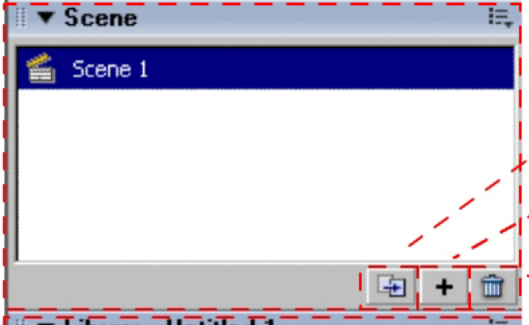
This will align symbols using the stage as an axis.



Transform
This panel will give the measurements of a symbol. You can adjust the scale & rotation of symbols by typing in numbers (for precise adjustments).

This button is pretty lame, it just copies symbols. Pointless once you are familiar with the copy and paste hot keys.

This will return a symbol's measurements back to 100%.

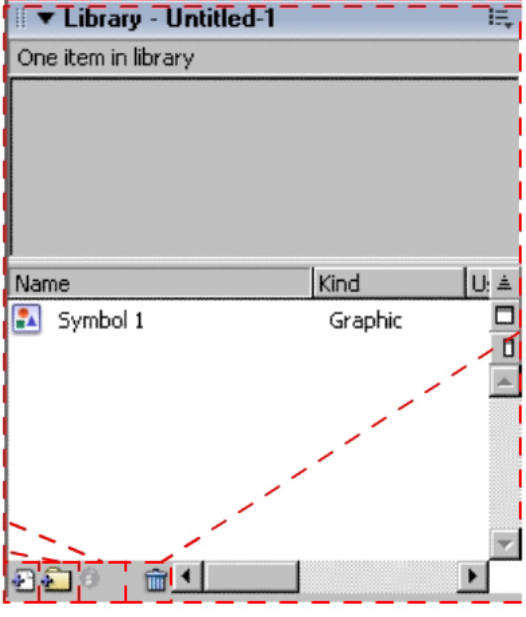


Scene
In Flash you can make multiple stages called Scenes. We don't use these when we animate, we use these for character model packs. One scene would be used for the main turnaround, another scene for hand charts, another for special poses etc. Basically they are used for organization.

Duplicate Scene

Add Scene

Delete Scene



Library
This is the house where symbols live. Flash allows you to organize your libraries using folders. With a sufficient symbol naming convention, folders inside the library are unneccessary, and often a waste of time.

Delete Symbol
use this button with caution if you want to delete a symbol from your stage because it's not working with the animation, **DO NOT CLICK THIS!** Select the symbol you don't want on the stage and press the delete key otherwise everywhere that symbol is throughout the scene will be gone **FOREVER!**

Symbol Properties

Create Folder

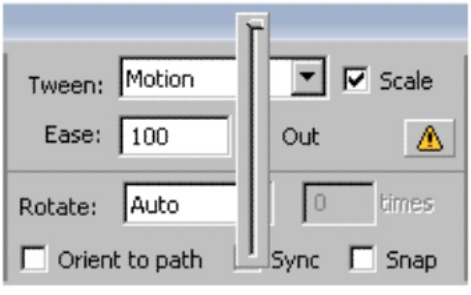
Create New Symbol

History Panel

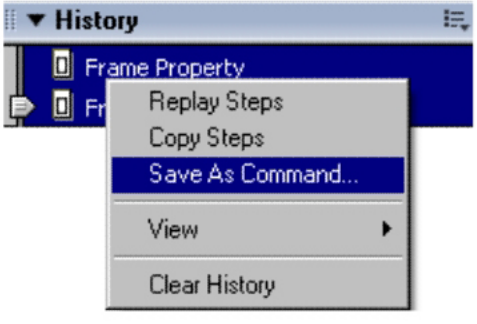
To make **Commands**, which are very similar to **Actions** in Adobe software, the History Panel is where it's at! You can basically make Flash remember functions or steps you like to perform and assign them to hotkeys. It's the only benefit of Flash Mx 2004, **THE ONLY BENEFIT.** To open the History Panel go to Window>Other Panels>History Panel. Now let's make a command.

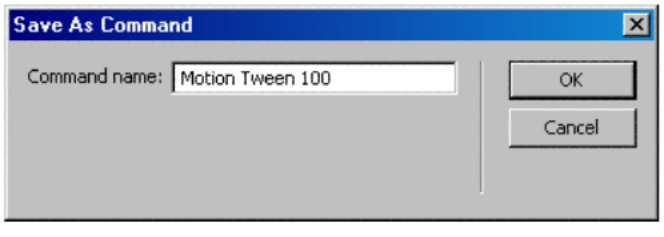
First you have to think of a function that you often perform that there isn't a hotkey for. One that I tend to program on every computer I touch is a Motion Tween with a Ease set to 100 (this will make more sense in further lessons). To make this motion tween command, I go to my timeline select a keyframe and in the Properties panel I set a Motion tween and then set the Ease at 100.

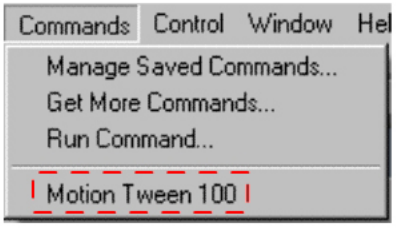
Selected Keyframe



Now in the History Panel at the very bottom there should be two **Frame Properties** listings. Select both Frame Properties and right-click. In the right-click drop-down select **Save As Command**. Name the command and click OK. Now in the main menu under **Commands** you should be able to find your custom command.



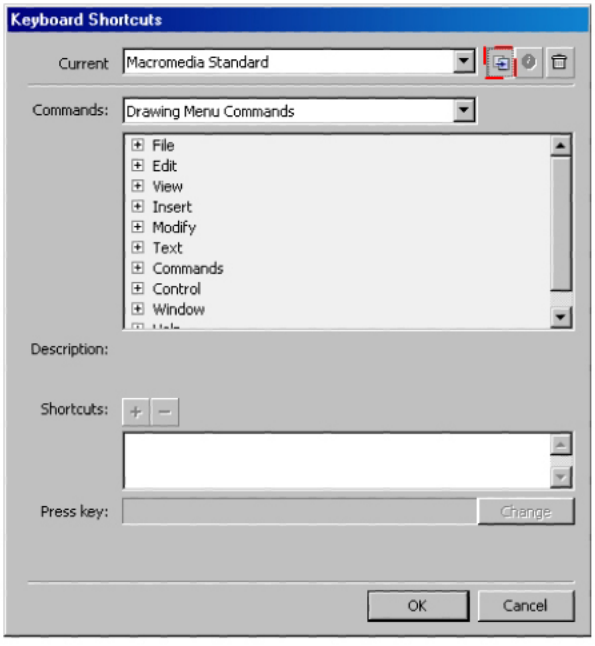




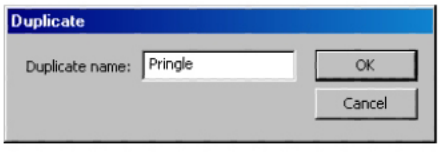
Customizing Hotkeys

Now that we have our command we can make it a hotkey to make things even more efficient. To make custom hotkeys go to **Edit>Keyboard Shortcuts**.

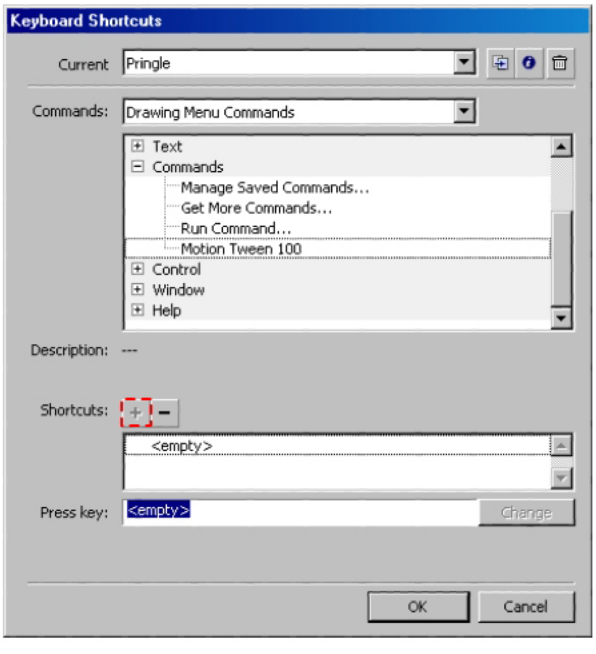
In order to set your own hotkeys, you must click on the **Duplicate Set** button to the right of where it says **Current: Macromedia Standard**.

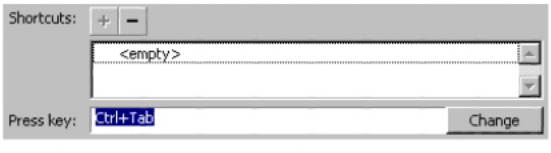


Name your custom keyboard shortcuts, I tend to use my name for my settings. Click Ok.

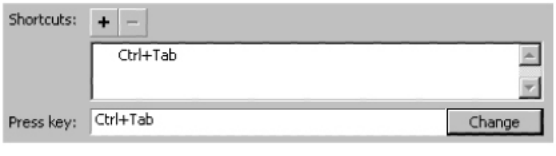


In the Keyboard Shortcuts menu scroll down till you see the Commands. Click on the plus box to drop down the menu. Now select Motion Tween 100. Closer to the bottom where it says Shortcuts, click the plus box. In the text box <empty> should come up. In the Press Key box type your hotkey, I used Ctrl+Tab.

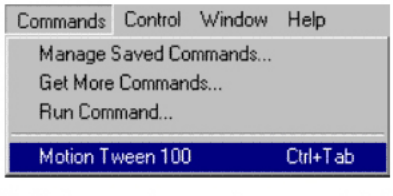




Now click Change. Where it said <empty> in the Shortcuts text box, it should now say the hotkey you typed in. Click Ok.



In the Commands on the main menu, you should now see your command and the hotkey labled beside it.



So there you have it, this is how you get Flash to automatically do work for you at the click of a button. Commands are very helpful and very addictive, they are very simple to make and if you are a programmer, possibilities of what you can command Flash to do are nearly endless; the only problem is finding a hotkey for each command you make!

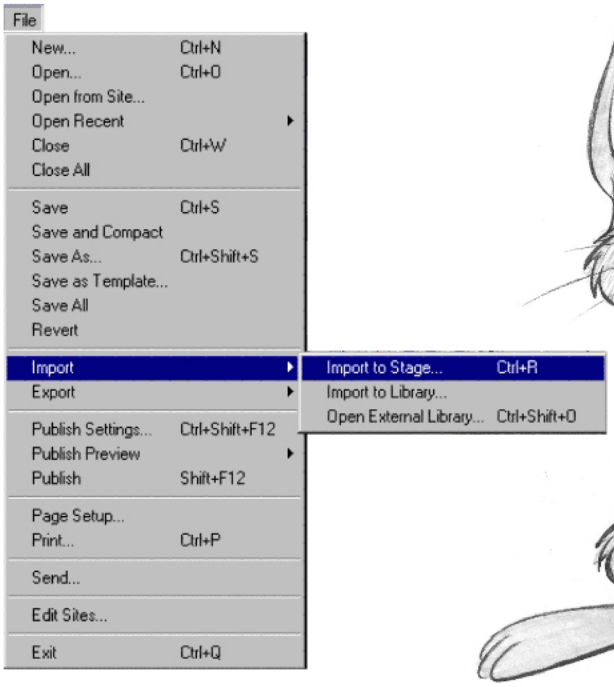
Chapter 2
Flash Clean Up

Importing

Cleaning up drawings in Flash is an important process for every animator to understand inside and out. Flash isn't the best program to clean up drawings in, but to minimize work in the long term, it is beneficial to keep the majority of work in Flash.

This is the character I will be cleaning up. Since I am not the greatest draftsman, I decided to 'borrow' this design from Preston Blair's Cartoon Animation Book.

The first step of cleaning up an image is to Import the file into flash.
Go to:
File > Import > Import to Stage
Or you can use the hot key Ctrl+R



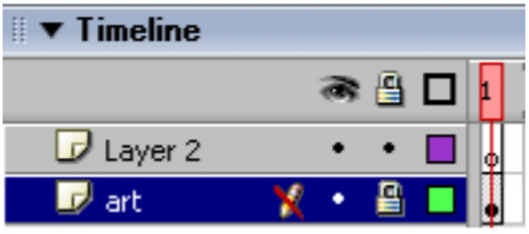
Constructing

"When constructing an animated character, visualize it as a three dimensional puppet that you are joining together with solid masses."
- Preston Blair

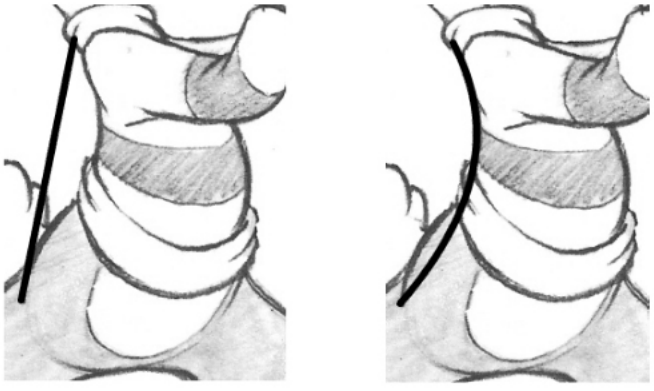
When cleaning up a character, study the design a bit and try to imagine how it would move if it were a paper doll. Think of each body part individually, even the ones that aren't visible like the arms and legs that are away from the camera.

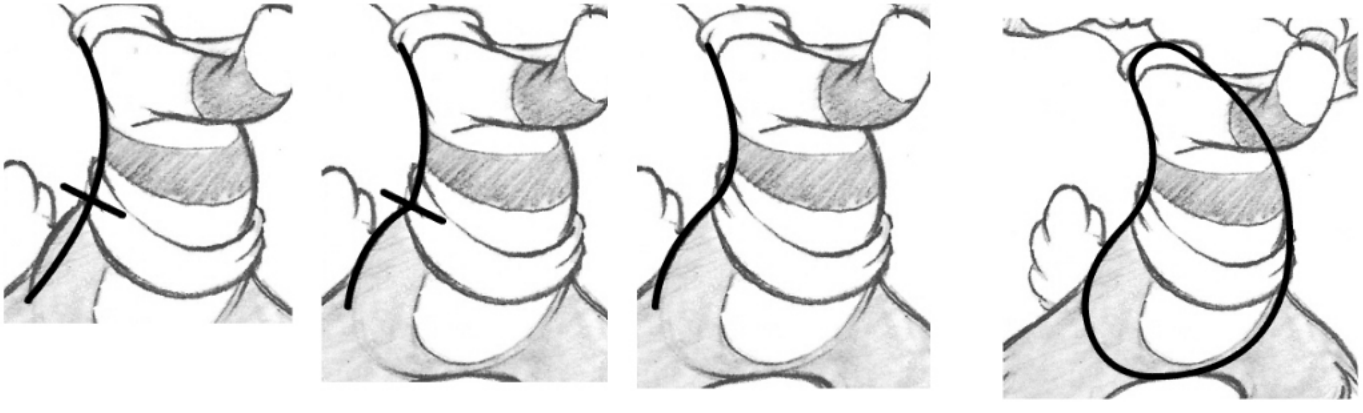
Inking

The very first thing to do is to have your image on the bottom most layer. Then lock the layer so that the art doesn't move around when you are in cleaning mode. Now make a new layer above the art layer and get started applying the outlines using the Line Tool or the Pencil Tool. It is best to clean each body part on its own layer and draw through each part.

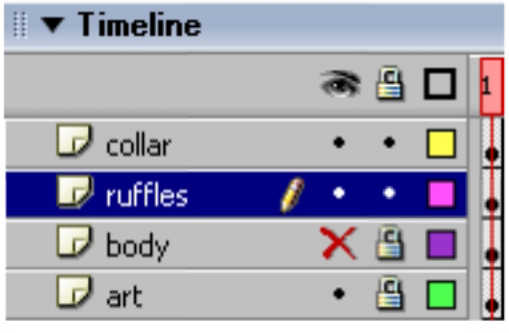


So here in the image below, I have a layer named "body" and that's where I began to ink the body. I drew the bean shaped body all the way through without any breaks in the line. There are some elements on the body like the shirt ruffles and the collar, to make it easier on myself I am going to ink those on a new layer above the "body" layer.



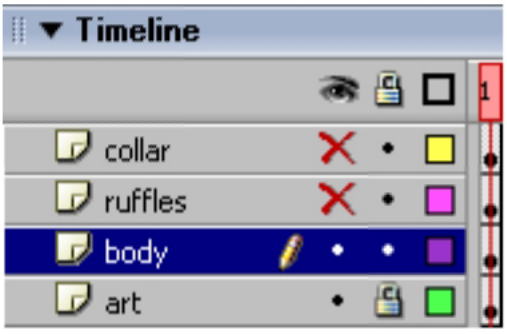


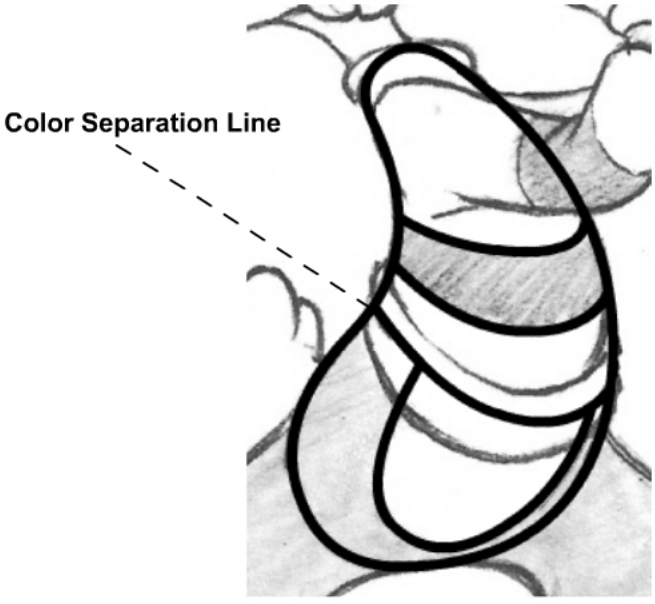
Now on the layers "collar" and "ruffles," I inked the collar and ruffles. I hid the body layer so it wouldn't interfere with inking the rest of the shirt elements.



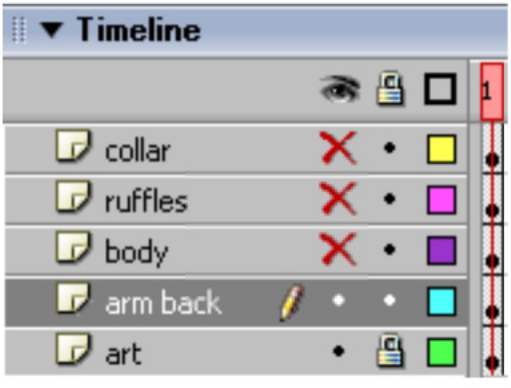
More Inking

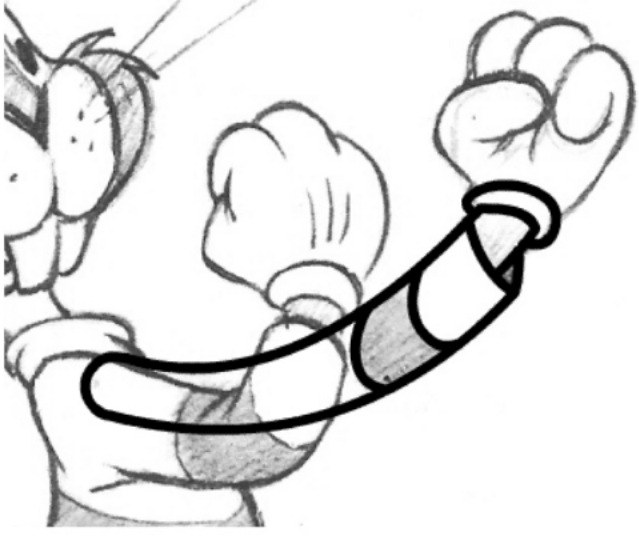
I turned the collar and ruffles layer off the body layer back on so I could finish the rest of the details. Notice that under the ruffles I inked a line across the body, this is to separate the color of the shirt and the fur. Don't worry though, this color separation will be covered by the ruffles , no one will ever know!

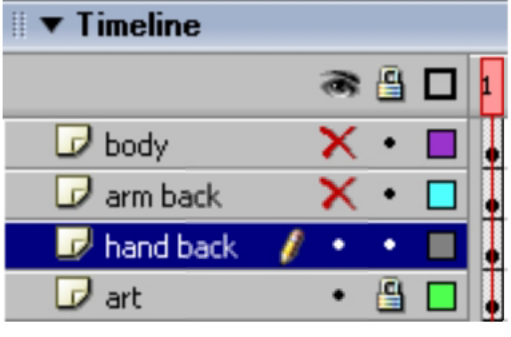




To ink the back arm, I hid all of the layers except the art layer. I made a new layer "arm back." Since the arm will be behind the body, its layer has to be under the body layer. Even though I could not see the whole drawing of the back arm because of the front arm and the body, I still drew it all the way through as if the character was not two dimensional. This will give me a lot more flexibility out of the drawing, if I had not inked the arm all the way through, there would really be no way to get appealing animation out of the pose. I also rounded off the end of the arm for better rotation, and I attached the glove cuff to the wrist but left the hand separated to allow more hand poses.



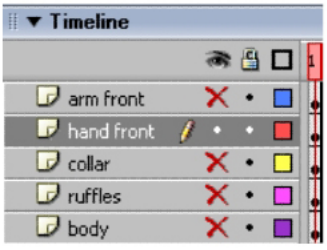


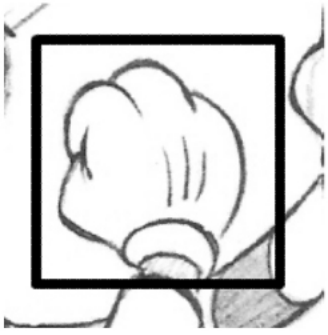


I now inked the back hand. I inked it on a new layer and I drew it all the way through under the cuff. Some of the detail looks pretty bad, but it will look better once I adjust the line weights later on.

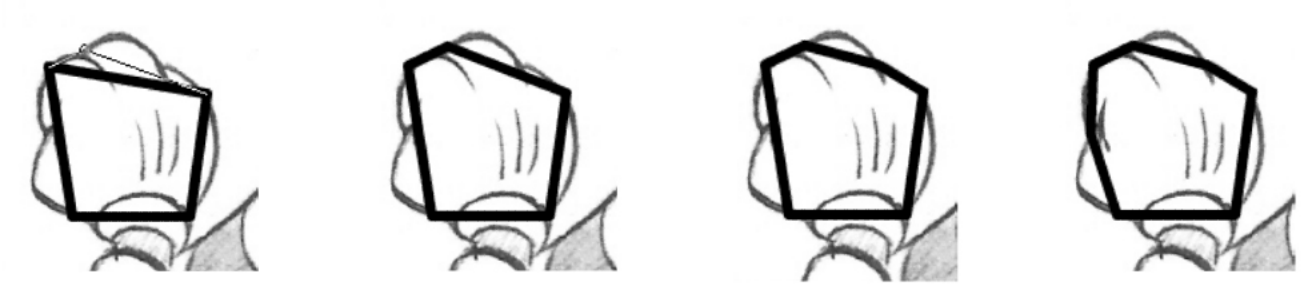
Inking With the Rectangle

My brother showed me a nice little clean up shortcut using the rectangle tool and some neat hotkeys to make the inking experience a breeze. First select the Rectangle tool (R) and click and drag a box on a new layer over the drawing. Without selecting the Black Arrow Tool you can still achieve its functions by holding down the Ctrl key. With that said, hold Ctrl and move the mouse over the corner of the rectangle you've made and click and drag the points over the line of the drawing.





Four points are not nearly enough needed to clean up this drawing. Usually what I would do to make more points is to select the Line Tool (N) and intersect the line to make more points. This is not necessary if holding **Ctrl+Alt**, which allows you to make new points on the line by clicking and dragging, it makes clean up so fast! Now by holding down Ctrl+Alt I will click and drag points into all of the corners of this hand.

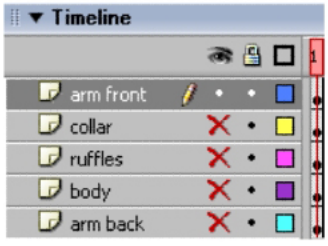


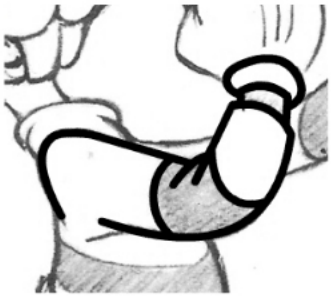
With all of the points needed, I can start curving out the outline. To do this, I will only hold the Ctrl key and click and drag the line between two points and bend the line matching the drawing.

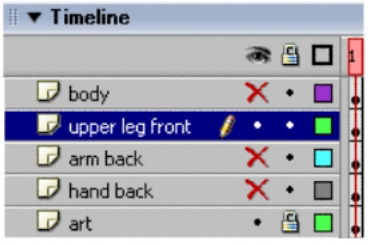
Now that the hand is silhouetted, I will select the Line Tool (N) and add any extra detail on the inside and I'll be done.

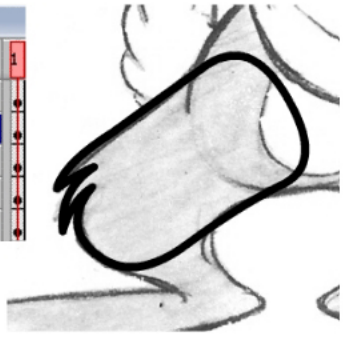
More Inking

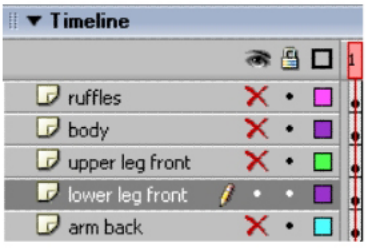
I'm too lazy to type a description for every body part I ink, like anybody is even reading this! So the next couple of pages will be a collection of my progress. Please pay notice to how every body element is inked all the way through.

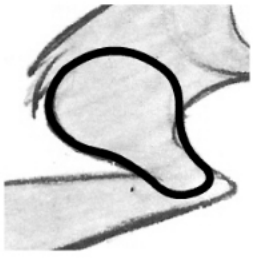


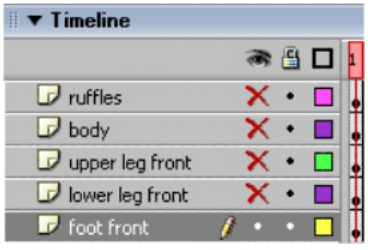


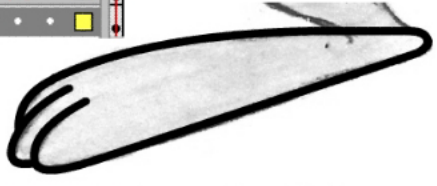


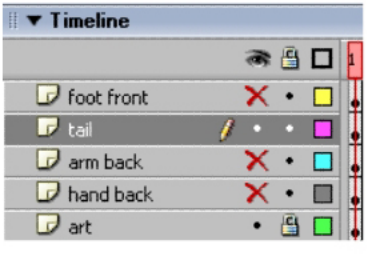


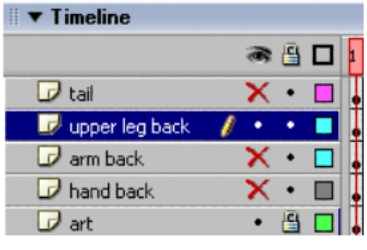


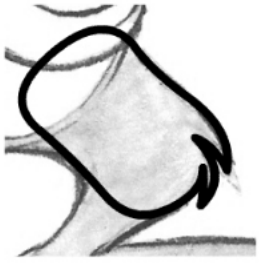


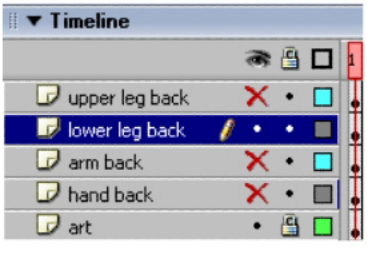


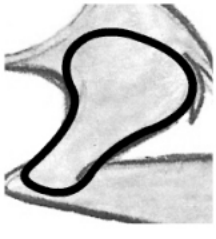


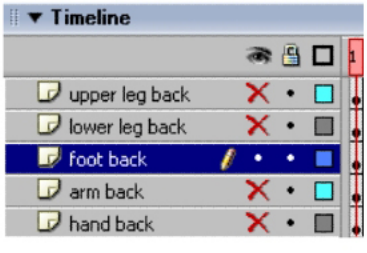


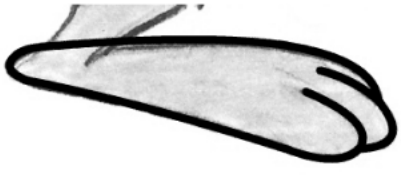


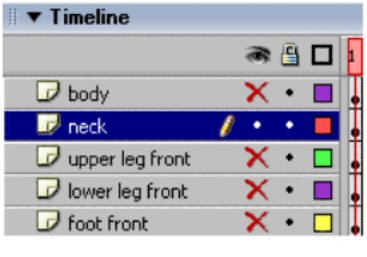




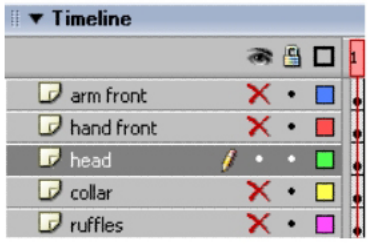


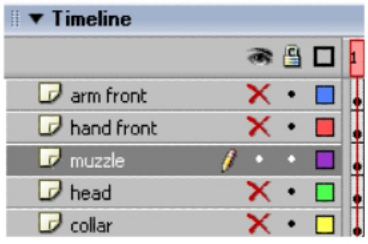


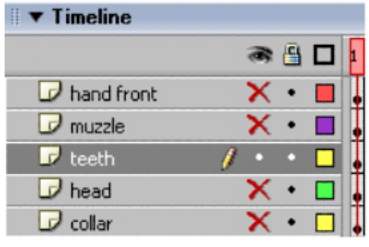


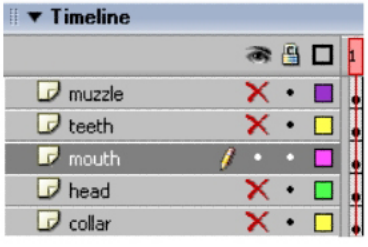


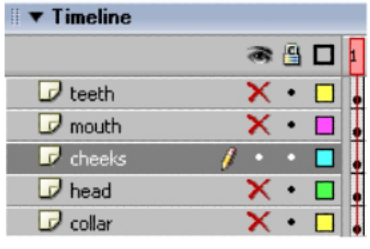
More Inking

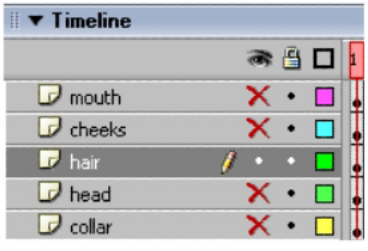

Timeline
arm front
hand front
head
collar
ruffles

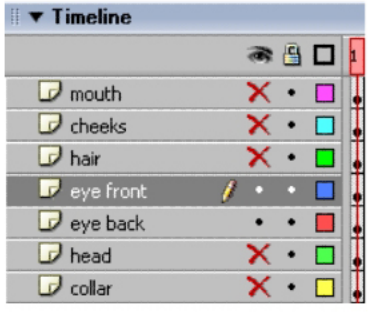

Timeline
arm front
hand front
muzzle
head
collar

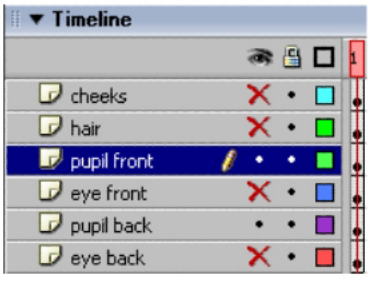

Timeline
hand front
muzzle
teeth
head
collar

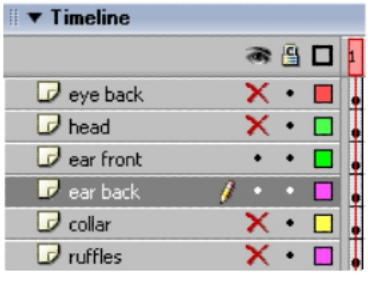

Timeline
muzzle
teeth
mouth
head
collar


Timeline
teeth
mouth
cheeks
head
collar


Timeline
mouth
cheeks
hair
head
collar


Timeline
mouth
cheeks
hair
eye front
eye back
head
collar


Timeline
cheeks
hair
pupil front
eye front
pupil back
eye back


Timeline
eye back
head
ear front
ear back
collar
ruffles

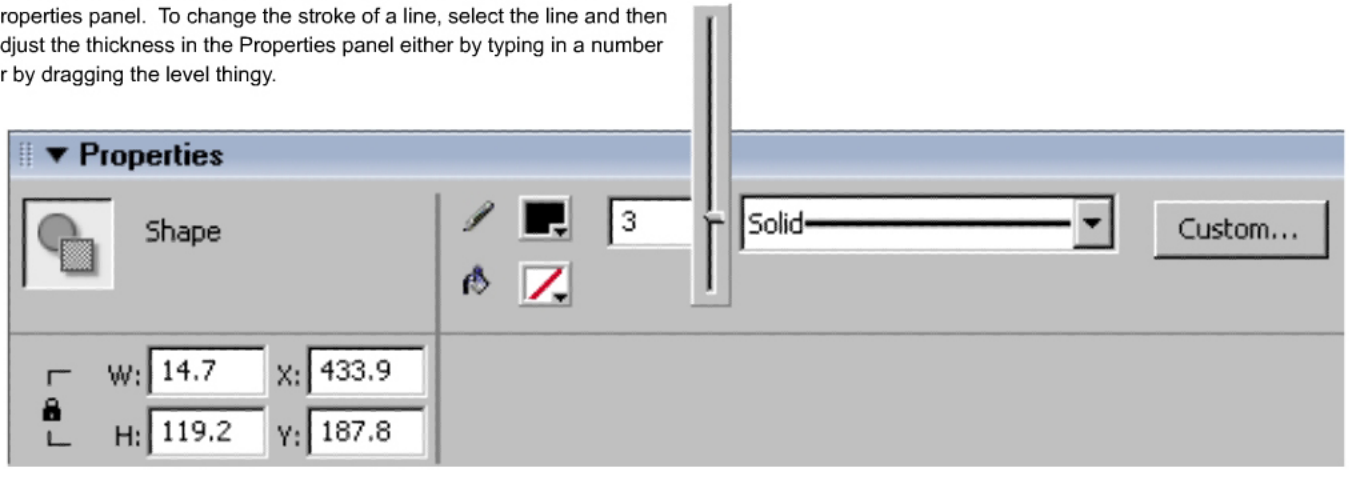
Paint

Here's the result of the ink process. I know what you are thinking, and you're right- it looks awful! Fear not, if I paint bucket all of the parts with white it will begin to look better. To make the clean up go faster you can add color as you apply the lines. I saved the color for last purely for educational purposes.

After painted white

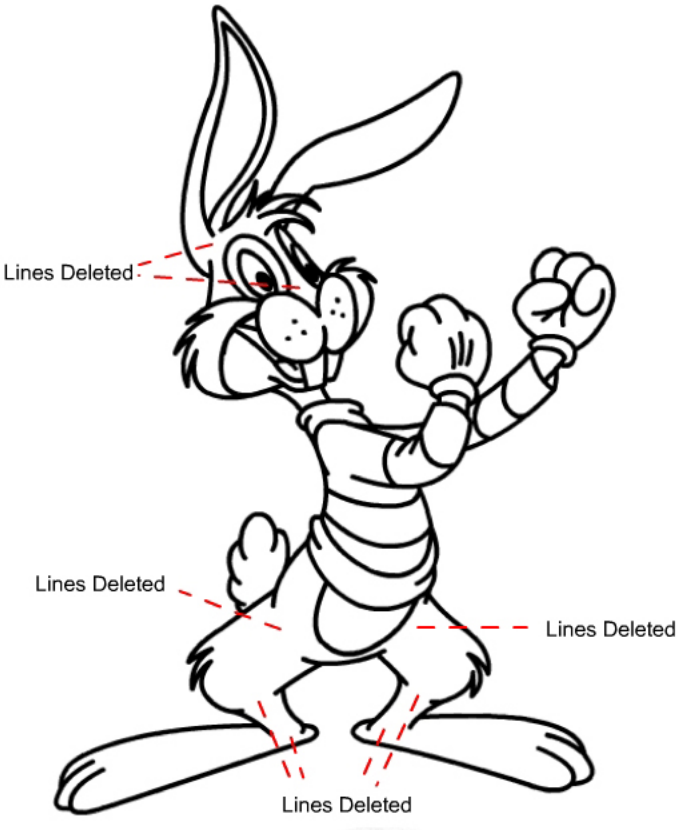
Lines

Now that all of the parts are filled in with white, to make it look even better I am going to go through and delete some lines I don't need anymore and alter the line weights using the stroke options in the properties panel. To change the stroke of a line, select the line and then adjust the thickness in the Properties panel either by typing in a number or by dragging the level thingy.



More Lines

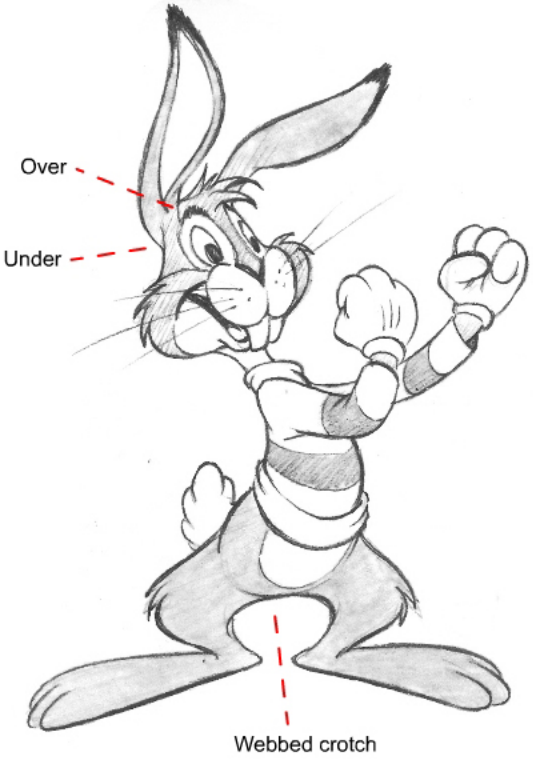
All done. The problem with flash is that the lines do not have a taper option and they all have rounded ends. To get a flat end and tapered strokes, Flash gives the option of converting lines to fills. **Modify > Shape > Convert Lines To Fills**. Once converted, you would have to modify each line manually, which can be a lot more work, but it gives the design more appeal at your control. If the conversion of lines doesn't sound like your cup of tea, there are always the brush features in Adobe Illustrator which are very awesome. With the brushes in Illustrator, a line can have a rough pencil texture or a smooth taper to a point at the click of a button. However, this is a flash course, if you wanna learn more about Illustrator, you should take an Illustrator course.



rounded ends

Line Weights Adjusted

I also changed the design a bit with the legs and the front ear so they would work better in Flash. The webbed legs do not work too well in Flash, I also segmented them into thighs and calves so I won't need new drawings to make them bend. The ear has a fold over the head and then under the head, I decided to just make the ear go completely behind the head.



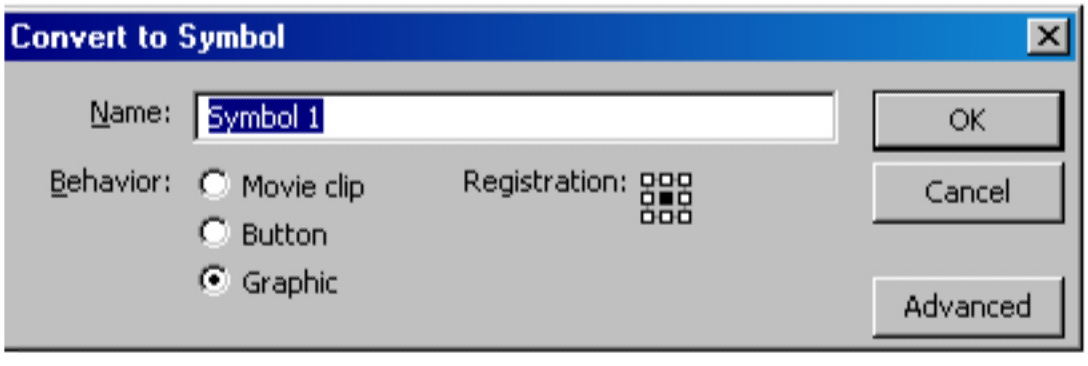
Chapter 3
Symbols

The Artist Formerly Known As (the symbol)

Symbols are the casing for broken or raw art. Raw art is only affected by editing it inside of a symbol. Each symbol contains its own independent timeline from the one on the mainstage, which gives Flash a huge advantage as a software for animation. With somewhat limitless levels of timelines constructing a single character, Flash provides animators the availability to make fluid animation full of secondary motion and subtle movement that would not be as convenient to produce if traditionally done. Symbols are the basis of reuse in Flash animation. Once artwork is symbolized, it is 'one drawing' throughout an entire scene. If the same artwork is not symbolized, but however is used to animated with throughout a scene, each time that asset is keyframed, it is interpreted as a 'different drawing' every keyframe it appears, which often makes files difficult to edit and also playback slower. Confusing? Basically, symbols let Flash know that a piece of artwork is reusable by storing it in the Library, and if it's not symbolized, the art is not fully being reused. Sorry, I have no better way of explaining it, try reading the User Manual or something.

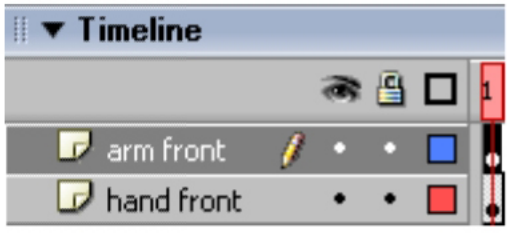
Any asset that is animated in Flash must be symbolized. Animating raw art is only acceptable when it is traditionally done, which is okay to do in Flash, but then what is the point of using Flash as a tool if it isn't utilized to its full capacity? Symbols have the availability to be motion tweened which eliminates the amount of inbetweening one must do to make animation beautiful. Symbols can be squashed, stretched, rotated, and skewed but they cannot bend. To bend artwork, you must go inside a symbol by double clicking it. Once inside you can manually bend the art by pulling points with the arrow tools or by using the envelope tool (which can be quite buggy). An even cooler way of bending art is by copying it and pasting it into Illustrator, making the art a brush and applying that brush to a curve, then pasting the curve back into the symbol in Flash. It's such a wonderful feature Flash lacks, it's the only feature Illustrator has that makes it a necessity when animating in Flash. Just be aware that sometimes while copying artwork back into Flash from Illustrator, Flash will drop out points from the artwork sometimes causing it to disappear. If this happens, try slightly rotating the artwork in Illustrator before copying, then after pasting it in Flash, if successfull, rotate it back to how it was.

To symbolize, select the object , then press F8 to Convert to Symbol. A window will pop up asking to name the symbol and to set other preferences. Set the behavior on "Graphic" and set the Registration to the square in the center, now click OK. Now each time a symbol is made, it will automatically have these preferences set. However you will still need to name the symbol.

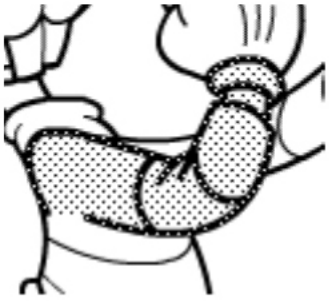


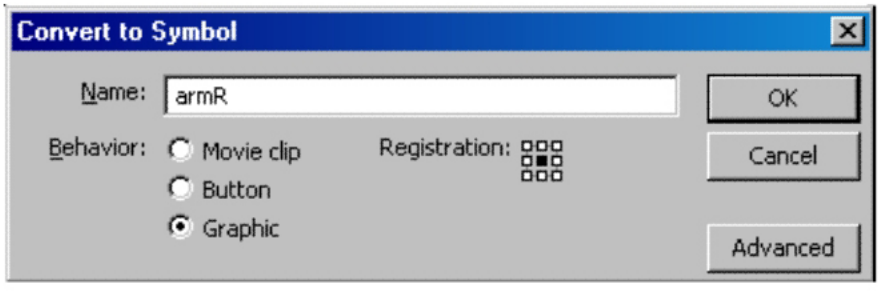
Behaviors are the type of symbol being created. **Movie Clip** symbols allow animation to exist inside of a symbol but will only playback in a Flash Movie file or SWF. Also animation will loop inside of a Movie Clip symbol unless if Actions programmed tell it otherwise. Movie Clips are not used or not suppose to be used for television animation, they are primarily for website design/animation. **Button** symbols are also only for the web, they are symbols that contain hyperlink capabilities and all of that interactive junk, useless for television. **Graphic** symbols contain art without the weird internet hoopla, which is why they are used in television productions. I don't know what else to say about Graphic symbols. I set my symbol **Registration** to the center for copying and pasting frame reasons. It won't make any sense if I try to explain, I just like it in the center, you should too.

To select the raw art you can either select it by using the Black Arrow tool, which functions exactly like the Marquee Tool in Photoshop when clicking and dragging over the artwork, or by simply clicking on the keyframe that contains the art you want symbolized. With this said, let's get started symbolizing our character.



Select the keyframe to select artwork



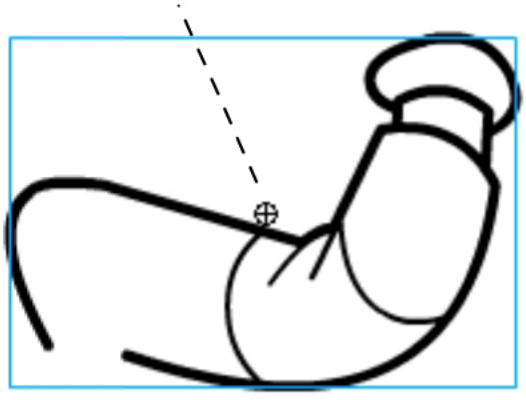


Give the symbol a name. Each production has a different naming convention, don't stress too much on what to name your symbols right now, save it for when you are on an actual production.

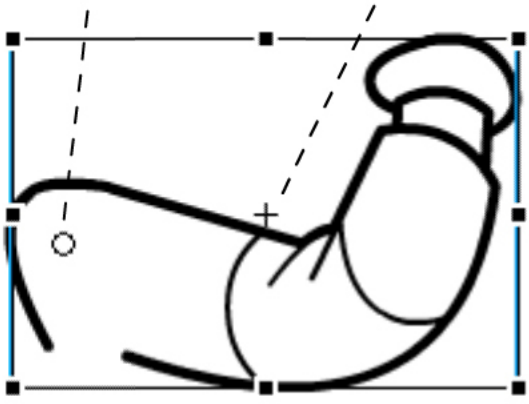
Edit Points

Once symbolized, the object is no longer "broken" raw art. The object is now surrounded by a blue box and added to the fla library. In the center is a white dot, this is the edit point, the most important part of a symbol. Before any animation is started the edit point must be adjusted to the axis of rotation or the joint (like a paper doll/puppet). If the edit point is not adjusted it will be difficult to animate the symbol throughout the scene. Also if edit points are later adjusted mid-animation, most-likely, any motion tweens set will become buggy. Motion tweens use the placement of the edit points to generate the inbetweens, if two edit points don't match up on the same symbol, the tween will not move properly. Therefore it is very important you adjust edit points to a permanent position on the symbols before beginning animation. To adjust the edit point, select the Free Transform Tool (Q), this will able you to move it to the desired position. For any reason you need the edit point to return to its natural position, simply double click on the little crosshairs on the symbol while the Free Transform Tool is selected.

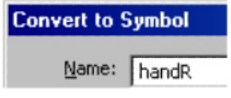
Default Edit Point

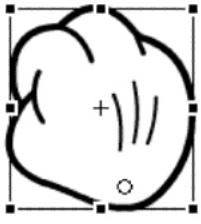


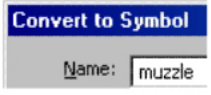
Adjusted Edit Point **Crosshairs**

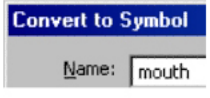


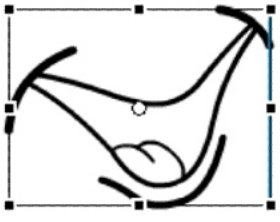
Now I'm going to waste no time and go ahead and symbolize the rest of the rabbit, please bear with me.

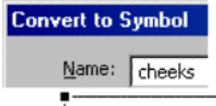


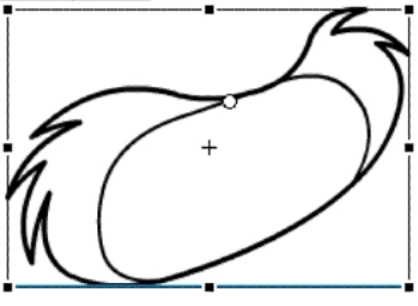


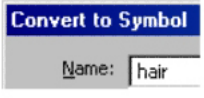


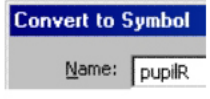


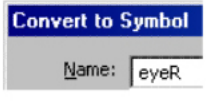


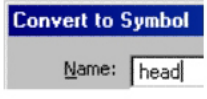


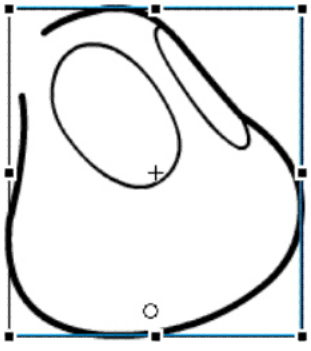






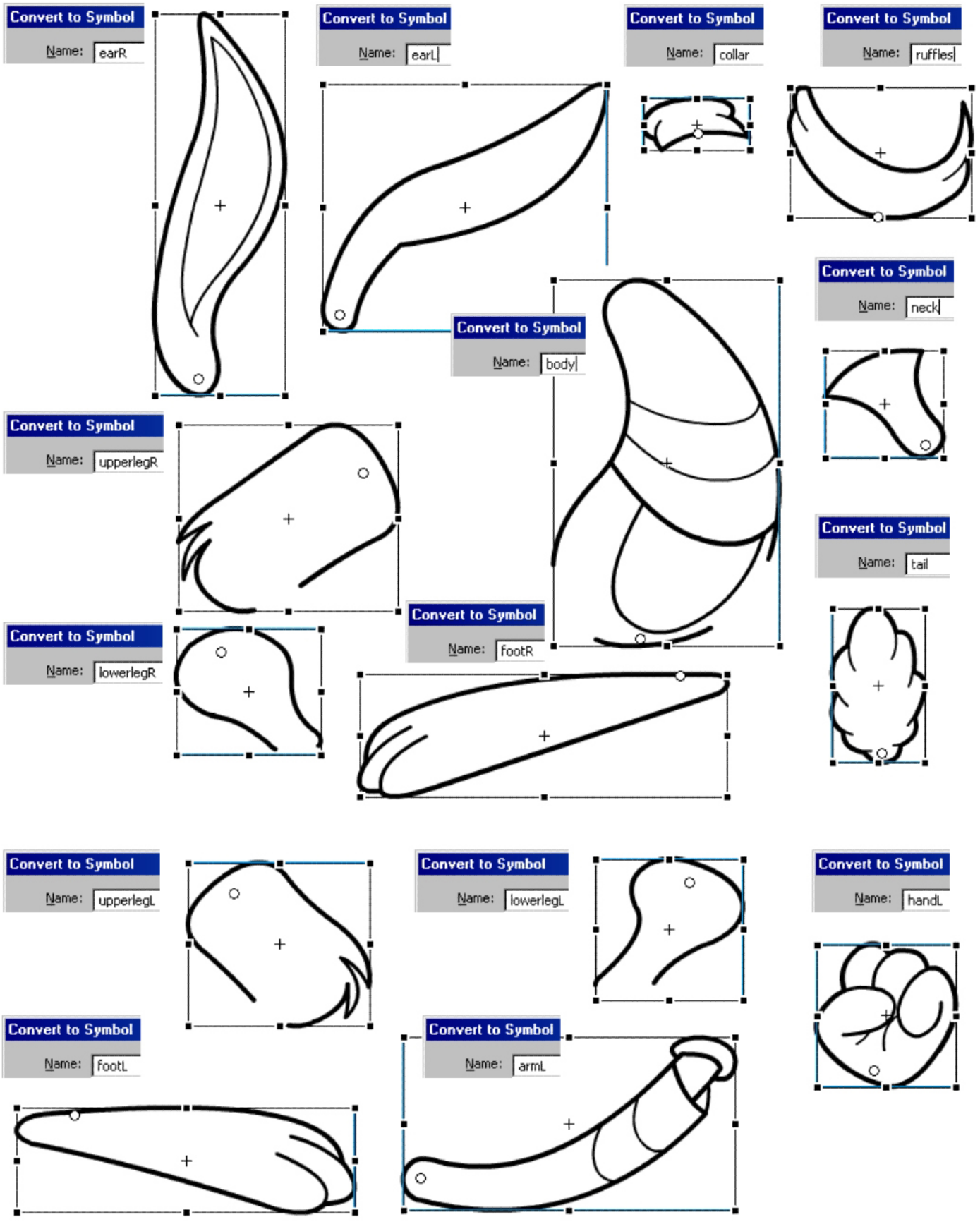






Symbolizing

Please pay attention to where I am placing the edit points, otherwise there is no point of me taking a screen grab of each part I symbolize. Thank you.

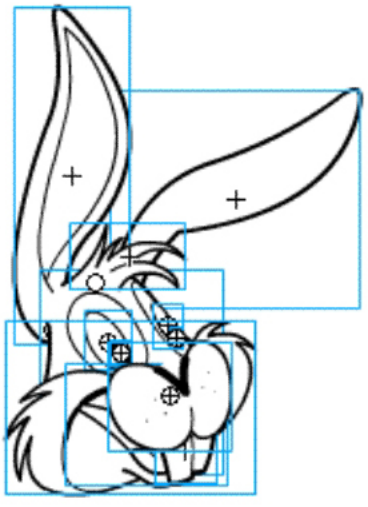


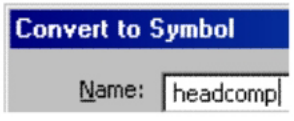
Nested Symbols

Symbols nesting other symbols are referred to as **Comps**. Comps nest concentrated animated sequences called **Instances**. This can be very helpful when setting up heads with full mouth and eye charts, or arms and legs with a series of frames animating from straight to bent poses. Fla set up depends highly on comps, the more comps in a fla, the more organized it will be. But be weary, it is possible to have too many comps where it will weigh down a Fla and will make editing animation very difficult.

Now that I have the rabbit symbolized, I am going to make the necessary comps, follow me...

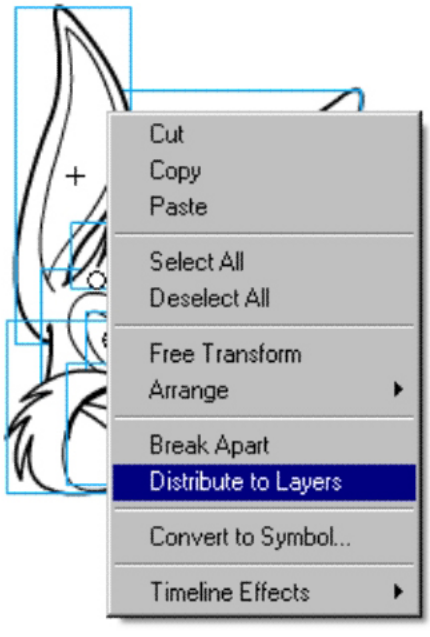
Select all of the face elements to make a head comp, including the head, ears, hair, etc... This is where the facial acting will be animated.
Press F8 to symbolize it all together
Make sure to add "comp" in the symbol name so you know it's a comp
Adjust the edit point to where the neck connects to the head



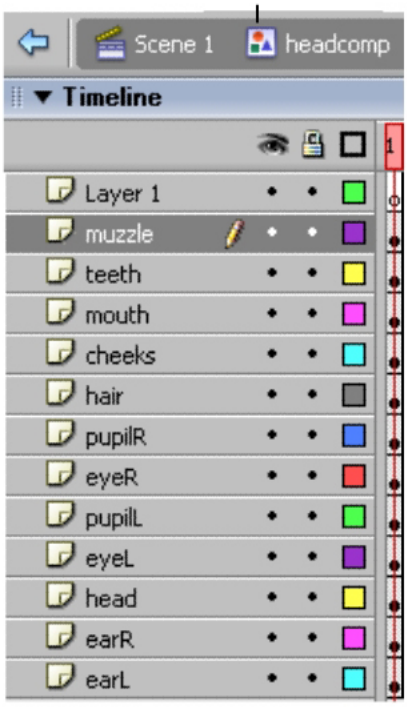


All of the layers on the timeline that once held the face elements are now blank keyframes, we can trash these layers to keep our file clean.
Double Click on the headcomp symbol to get inside
Click on the one keyframe inside to select all of the symbols
Right click any of the symbols on the stage and select Distribute to Layers

You can delete all of these layers



Graphic Icon

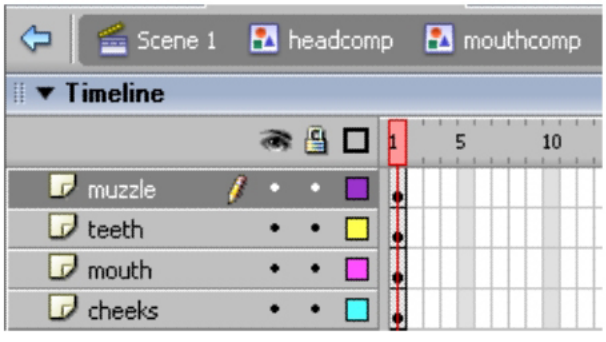


Now all of the symbols magically separated onto their own layers.
Even the layers are automatically named after each symbol.
Notice next to where it says "Scene 1" there is a Graphic Icon and it says "headcomp", that means I am inside of the headcomp symbol, to get out of this symbol double click any blank area on the stage or by clicking where it says "Scene 1".

Comps

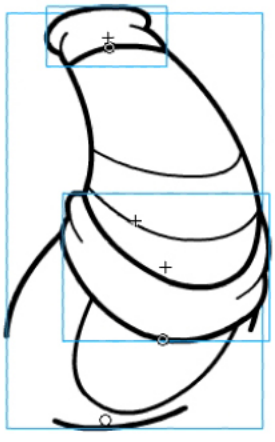
Now I'm going to make a mouth comp. This character has cheeks, a muzzle, and teeth that can be self-contained in a comp.

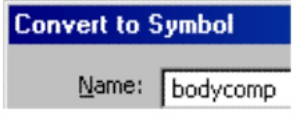
Select all of the mouth elements.
Symbolize them "mouthcomp"
No need to adjust the edit point it's fine where it is.
Delete any empty layers.
Go inside the mouthcomp and distribute to layers.

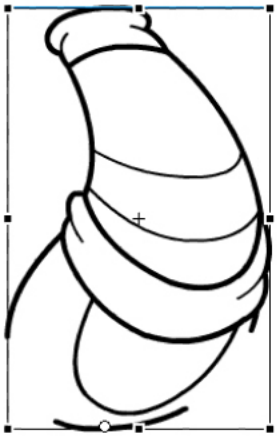


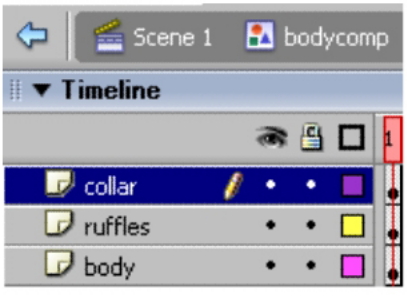
Notice that the artwork that is not inside of the comp is grayed out, that means you cannot select any of it unless if you exit the symbol you are currently in.

Now let's put the body elements in a comp, I doubt the ruffles and collar will be animated much so they can be joined with the body. This will also minimize the amount of layers on the timeline.



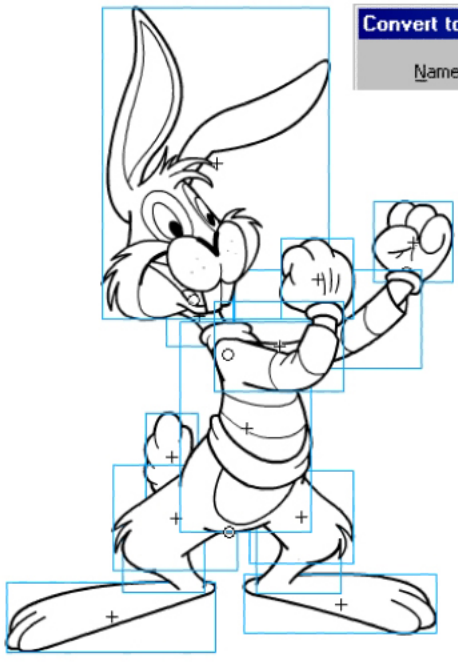


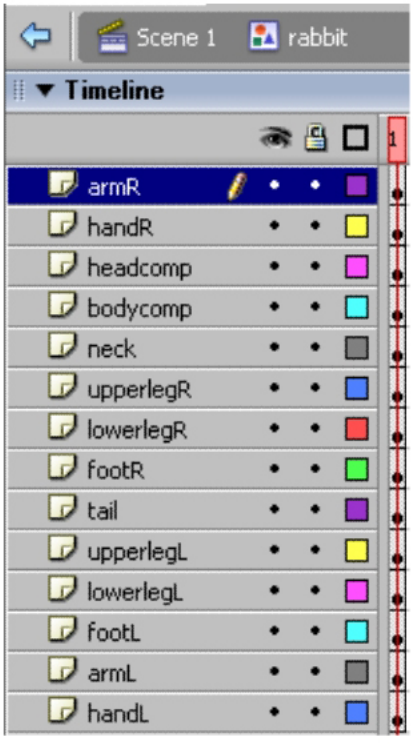




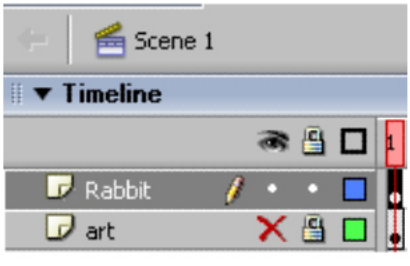
More Comps

To finish, I am going to make a character comp. All of the rabbit's animation will be inside of this comp.
Select all of the rabbit's symbols.
Symbolize F8.
Delete Empty Layers
Go inside of the comp and Distribute to Layers.
Save your work.
and now we are done with this lesson.





Adjusted Edit Point



Now the rabbit Fla is nice and neatly organized. The stage only has two layers, the rabbit layer with the rabbit comp and the art layer with the jpg of the rough drawing. Notice I adjusted the edit point on the main comp to the bottom of the symbol because that is where all of the rabbit's weight is.

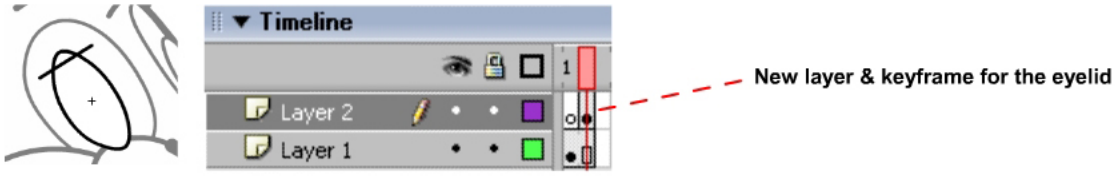
Chapter 4
Eye & Mouth Charts

Eyes

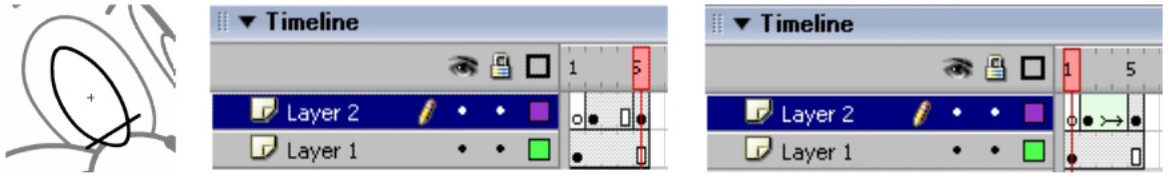
Now that the character is built with symbols and comps, we can complete the model by adding an eye and mouth chart to make it animation-ready. With eye and mouth charts, we will have the ability to make our character blink and talk by simply calling upon instances in the head comp rather than drawing new eye and mouth poses every time face acting is needed.

To get started with the eyes, click into the eye symbol.

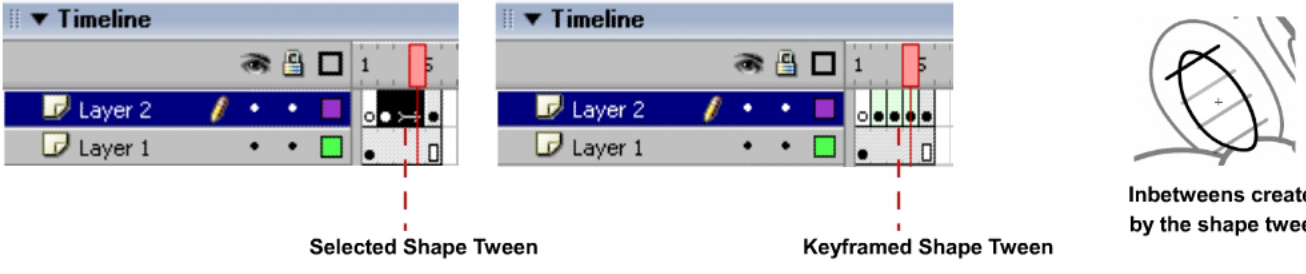
Make a new layer above the existing layer, add a new frame (F5), and add a keyframe (F6) on frame 2 and draw a line to make the eyelid. A new layer for the eyelid line will allow you to tween the line as shown in later steps without difficulty from the software.



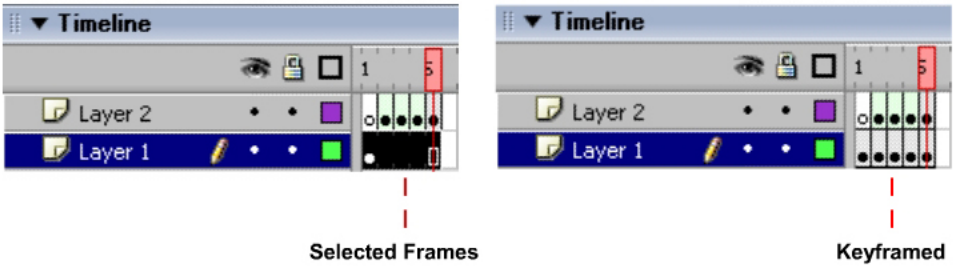
Notice that I made the line go all the way across beyond the eyeline, this is because I'm going to make a new keyframe on frame 5 and position that same line to the bottom of the eye and then add a Shape Tween between the two keyframes. I just pulled frame 5 out of the air, you can make as many inbetweens for the blink poses you think would be necessary.



Add keyframes to the entire shape tween so each eyelid position can be cut and pasted onto the same layer as the eye to flatten the artwork to add color. First, select the whole shape tween by clicking on the first keyframe (it starts on frame 2) and dragging to the last (frame 5), you'll know you're doing it right when the frames turn black (that means they are selected). Then after they are selected, convert to keyframes by clicking F6.



Now on the bottom layer, add keyframes to all of the frames by selecting all of the frames on the layer and F-sixing them. This is so when the eyelid poses are cut and pasted onto Layer 1 they will be pasted onto their very own keyframe along the timeline so they animate and not just sit on the first keyframe. That would be bad.



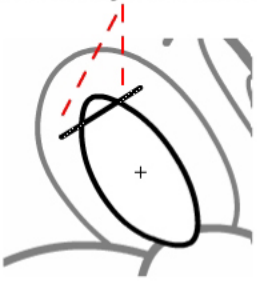
Eyes

With all of the keyframes in place, now cut (Ctrl+X) and paste in place (Ctrl+Shift+V) each of the eyelid lines on the Layer 1 keyframes directly below.

This is what the timeline should look like after "flattening" the eyelid lines with the eye.

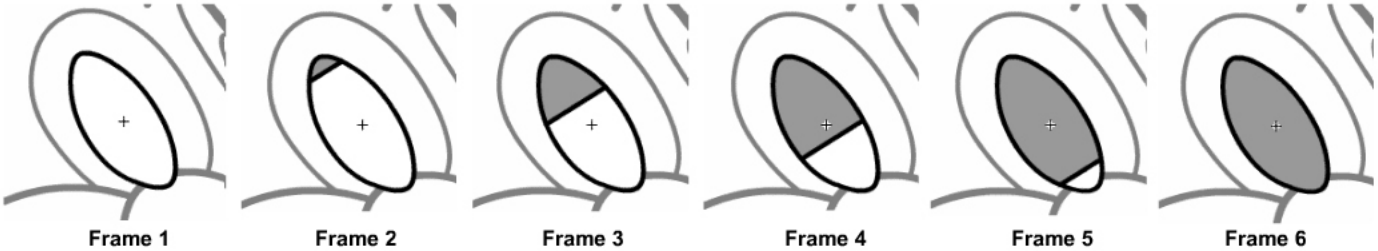
Go through all of the poses and delete the unnecessary lines that are on the outside of the eyelines. Since the eyelid lines now intersect with the eye line, you should be able to simply select them by clicking with the black arrow, and simply delete them by clicking delete.

Unnecessary lines to delete



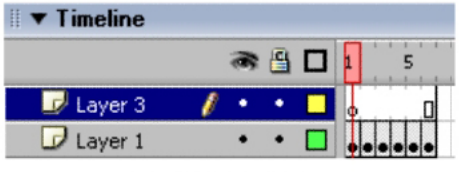
Deleted Lines

Trash the top layer since it is now a row of empty keyframes. Add another keyframe on frame 6 and draw a closed eye pose. What I did was just remove the eyelid line to make the eye appear closed, I also filled in a shade of gray in the lid so the blink is more clear for you to see.



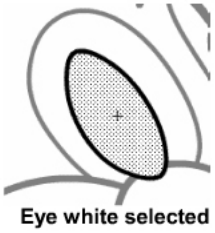
Frame 1 **Frame 2** **Frame 3** **Frame 4** **Frame 5** **Frame 6**

To set up the eye for the pupil to animate, the first thing to do is to make a new layer and move it below Layer 1 by clicking the layer where it says the layer name and then drag it below Layer 1. Select the white in the eye from frame 1 and cut and paste it in place on the new layer, then go through the rest of the eye poses and delete the whites. This is so the white of the eye is on its own layer below the lid.



New layer added

New layer moved below Layer 1

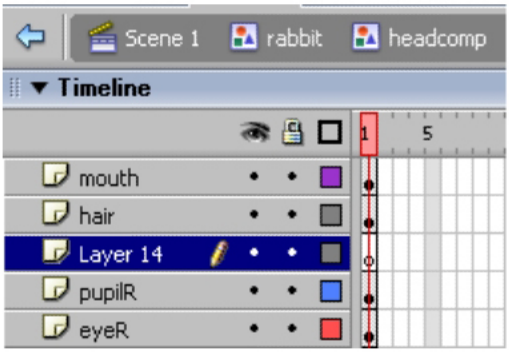


Eye white selected

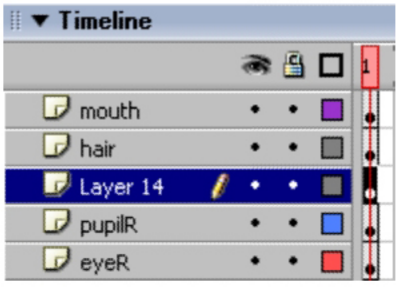
Eye white pasted on its own layer

Eyes

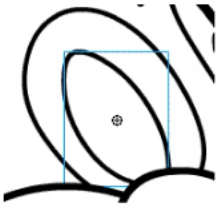
Now that the lids are separated from the whites, we can exit the eye symbol to the headcomp symbol. Make a new layer above the pupil layer. Copy (Ctrl+C) and paste in place (Ctrl+Shift+V) the eye symbol onto the new layer. Right-click the eye symbol on the eye layer and select Duplicate Symbol, name the symbol "eyeR white". This will allow the art inside the symbol to be changed without effecting the eye symbol we spent so much time making the blink inside. Double-click on the eyeR white symbol to edit in place and delete the top layer containing the eyelid animation. Don't worry, if you did this right all of that eyelid animation should still be in the regular eyeR symbol.



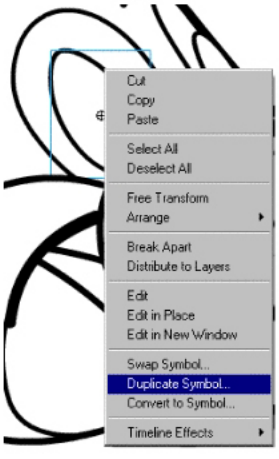
New layer added above the pupil layer

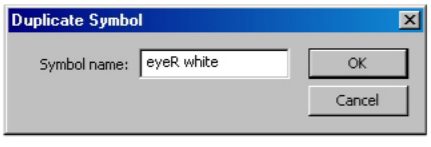


eyeR symbol pasted on the new layer

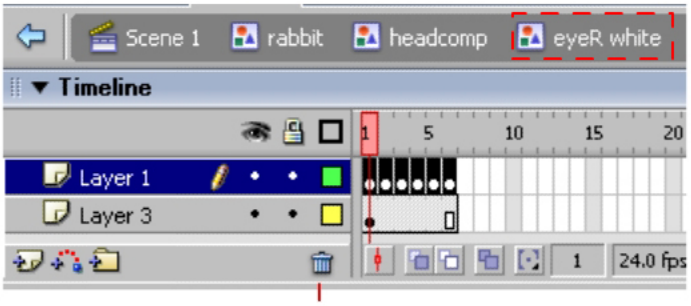


This is what it should look like after pasting the symbol on the new layer





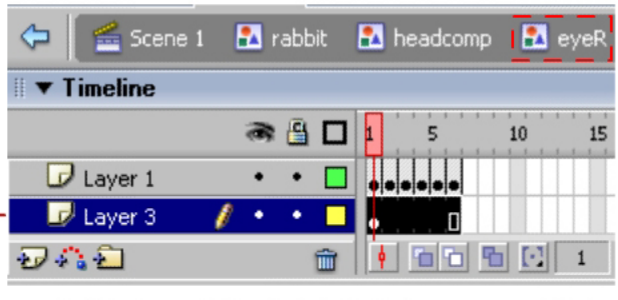
Delete this layer



Click the trash can icon to delete the layer

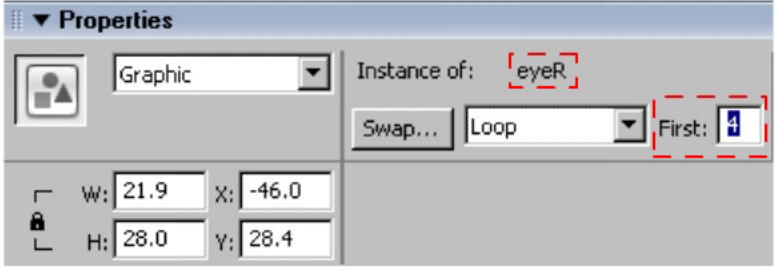
Go back outside to the headcomp symbol and double-click on the eyeR symbol on the new layer to edit in place. Inside of the eyeR symbol select and delete the bottom layer containing the white of the eye.

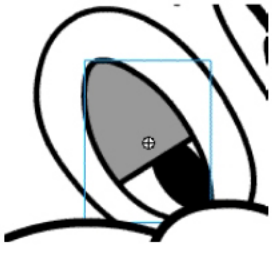
Delete this layer



Exit to the headcomp and tah-dah! To see what you did select the eyeR symbol and go to the properties panel, where it says "Instance of:" it should say "eyeR". In the box next to "First," type in the number 4, the forth frame inside of the eyeR symbol will appear on the stage in the headcomp symbol. Most of us Flash geeks refer to this as "calling upon an instance." So if you ever overhear us in our dork-talk mentioning the calling upon instances you will know what we are referring to.

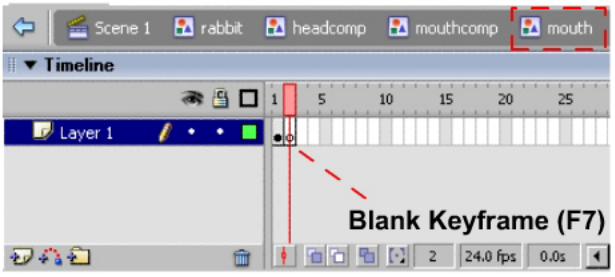
The eyelid now overlaps the pupil, giving the pupil the ability to freely to move around the inside of the eye. I'm going to go ahead and perform the same steps on the other eye, there is no need for me to document it though, otherwise I'd be repeating myself and forcing you to read it.



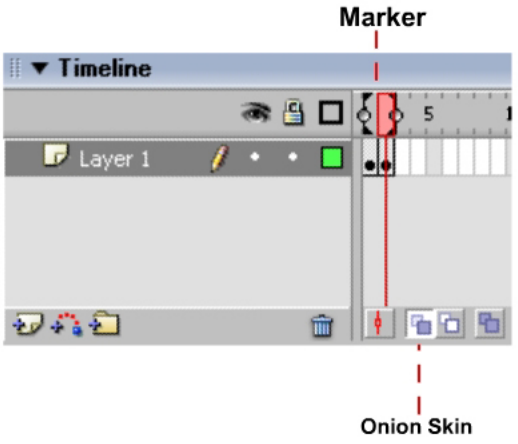


Mouths

To create the mouth poses, perform steps similar to when creating the eyes, except this time work inside of the mouth symbol and not the eyes. First dig deep into the mouth symbol. Once inside the mouth symbol add a new blank keyframe (F7) and begin drawing the new mouth pose.



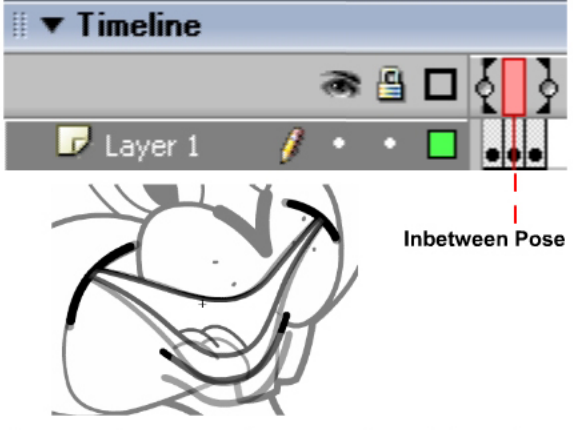
While drawing new mouth pose, use the onion skin feature so the previous mouth drawing is visible to make it nicely animate with the original mouth pose.



New mouth pose & grayed out o.g. pose

Now that there is a closed mouth for the rabbit, make an inbetween pose of the open and closed mouths. Before making an inbetween, rearrange the poses so the mouths are in the order of closed to open. Move frame 2 to frame 1 and frame 1 to frame 3 and leave frame 2 a regular frame, are you confused?

Make a blank keyframe on frame 2 and draw an inbetween.



Let's make an "Oh" mouth. Add a blank keyframe on frame 5, leave frame 4 a regular frame so it can be later used for an inbetween.

Inbetween for the Ah & Oh mouth

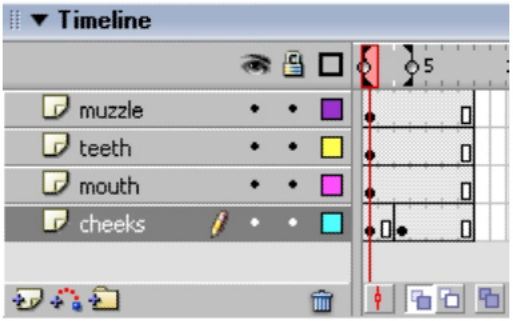
Just a couple more mouths to go, an Oo and a L mouth. Sometimes characters need more mouths than just these seven, usually a mouth chart will also contain a F, S, and a Th mouth. Since this character's teeth get in the way, it is easy to hide animation behind them, making it possible to lipsync with just these mouth poses. If you wanna learn how to make a full mouth chart, refer to an animation book because you're not gonna learn from me.

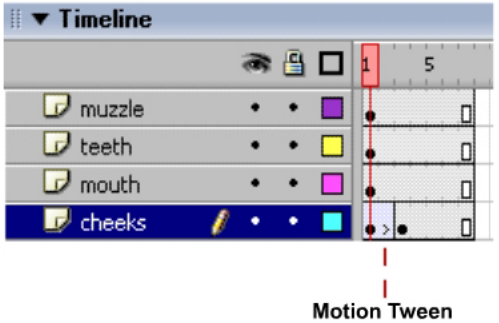
Oo
Frame 6

L
Frame 7

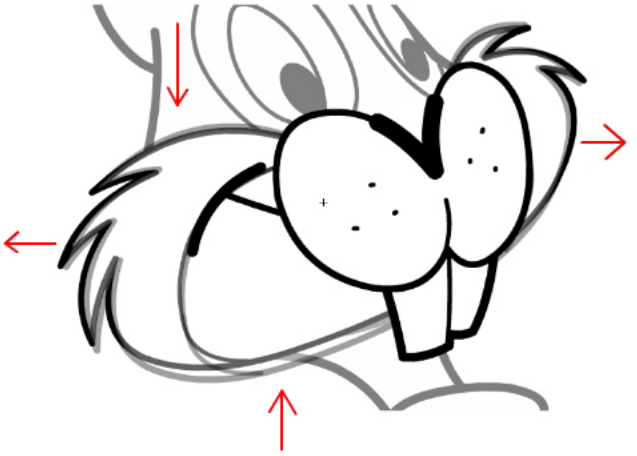
Mouths

Since the rabbit has cheeks it would look more organic if they animated with the different mouth positions. Exit the mouth to the mouthcomp symbol and add 7 frames (F5) to the timeline to correspond to the instances inside the mouth symbol. The mouth poses should play across the timeline since the default of a symbol is set to Loop. Add a keyframe (F6) to frame 3 on the cheek layer to lock the original pose into place. On frame 1 squash & stretch the cheeks using the transform tool making the cheeks flatter to match the closed mouth pose. Add a motion tween between frames 1 and 3. Now frame 2 is automatically inbetweened.

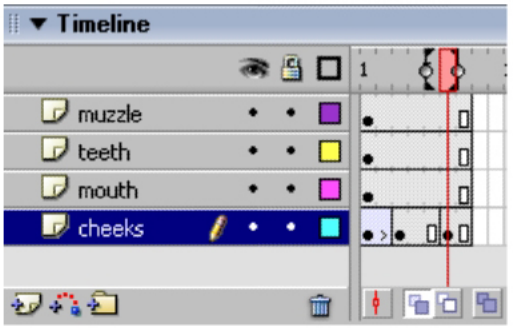


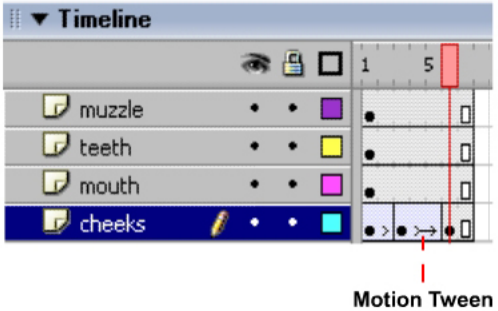


Motion Tween



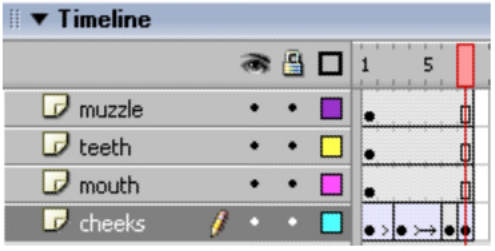
Add a keyframe to frame 6 and squash & stretch the cheeks using the transform tool to match the extreme oo mouth. Insert a motion tween between frames 3 and 6.

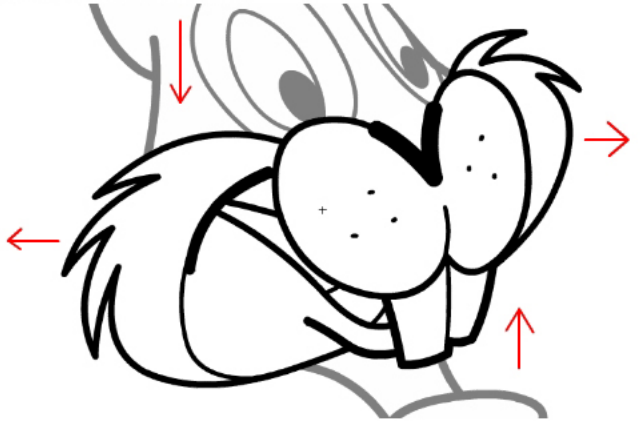




Motion Tween

Add a blank keyframe to frame 7, since the pose is very similar to the original Ah mouth, copy the cheeks from frame 3 and paste them onto frame 7. Using the transform tool, very slightly squash and stretch them just to change them a tiny bit.





Mouths

Frame 1
M/P/B

Frame 2
EE/S

Frame 3
Ah

Frame 4
inbetween

Frame 5
Oh

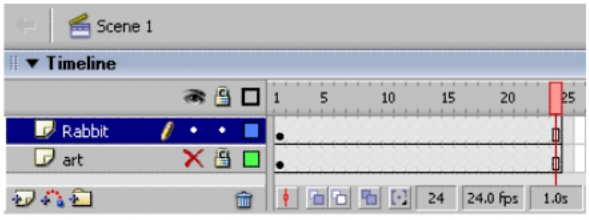
Frame 6
Oo

Frame 7
L

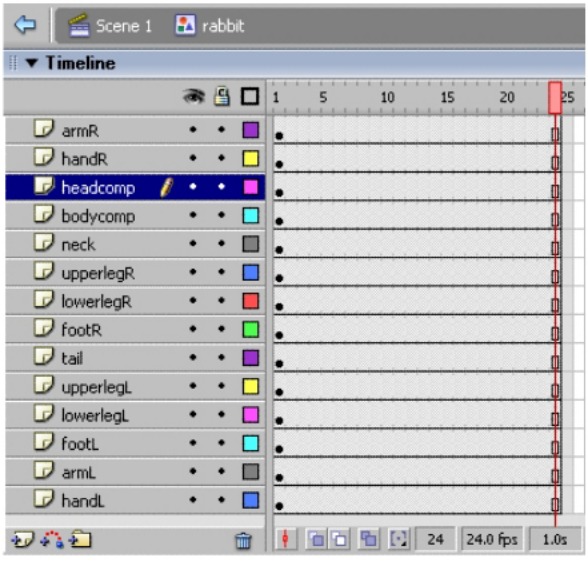
Chapter 5
Animation

Animation

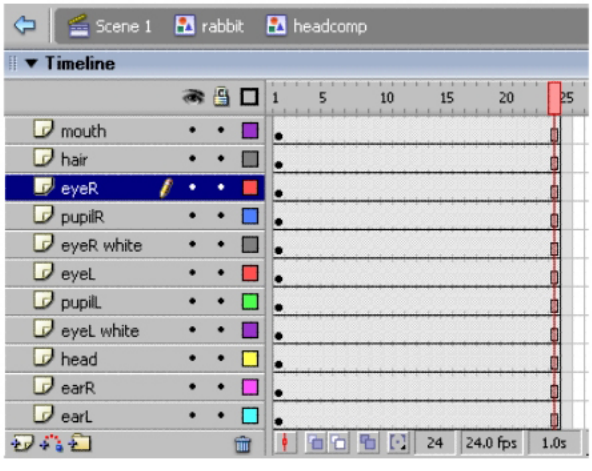
Now that we have an animation-ready model completely constructed in Flash, we can finally begin animation. First add frames (F5) to your mainstage timeline to set the scene length. Usually a scene's length is determined by the dialogue track, since we are not using a dialogue track at the moment, we are going to add as many frames that we want. I'm going to start with 24 frames, which is 1 second in civilian talk.



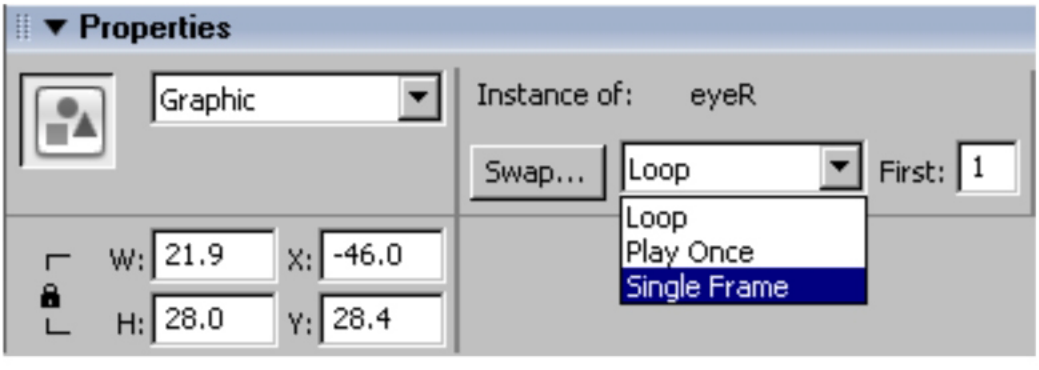
Edit in place or click inside of the character comp symbol, then add 24 frames to the timeline.



Perform the same steps inside the head comp symbol.



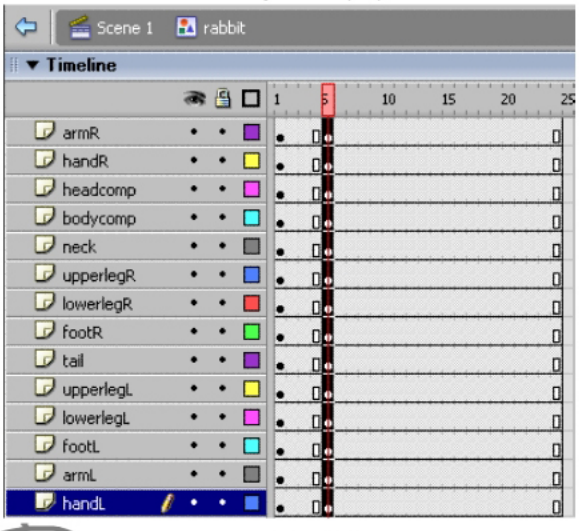
The eyes and mouths must be going haywire because they keep cycling on a loop. Stop the looping by clicking on the eye and mouth symbols and then in the properties panel where it says "Loop" click and select "Single Frame." Everything should be cool now inside the head comp.

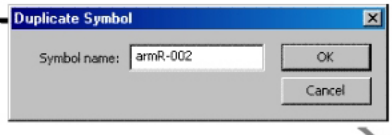


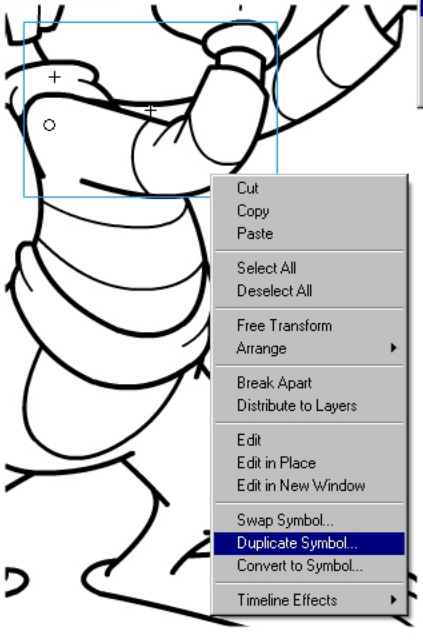
Key Poses

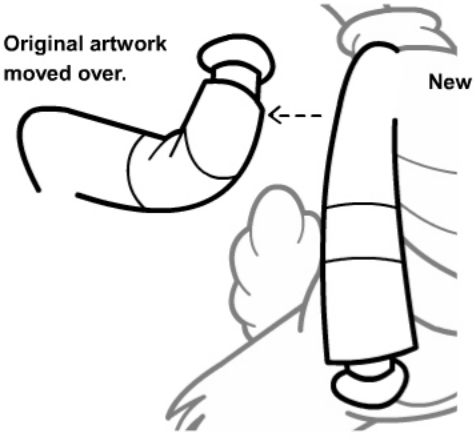
With the scene length set, it's time to begin **keyframing** or **blocking** out the main poses. All of the keyframed poses are to be made inside of the character comp. I'm going to make a new start pose for the character, it will help demonstrate the concepts of creating new poses in Flash as well as the concepts of snappy timing from pose to pose. First, it would be wise to keep the final pose which is the one that we have already created. On frame 5 click and drag to select all of the layers starting at the top down to the bottom of the timeline. Insert keyframes (F6). Now it is safe to make a new pose on frame 1 without affecting the final pose on frame 5.

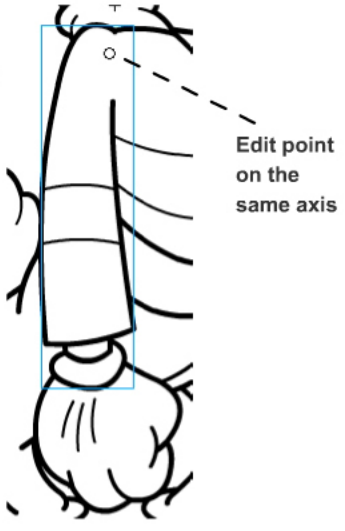
On frame 1, reposition the character, I'm going to draw his arms so they are straight down, and also straighten out the body. The way I make new artwork is by using the original symbol so the size remains at 100%, all of the lineweights are at a constant stroke and the edit point is on the same axis. Other people might draw new poses differently, by "differently," I mean **they do it wrong**. Right-cl ick the front arm and select "Duplicate Symbol." Rename the symbol to "armR-002." Inside of the armR-002 symbol, move the original artwork away from the character so it is still available to grab the stroke sizes with the eyedropper (I) if needed. Draw the new arm pose, make sure that it is drawn with the shoulder jointed in the same area as the original. Delete the original artwork once finished with the new pose. Exit the arm-002 symbol to the character comp, notice something? The edit point is already set in place over the shoulder, where it should be. Move the hand to its new position at the bottom of the new arm.



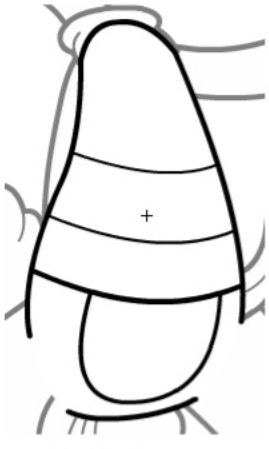




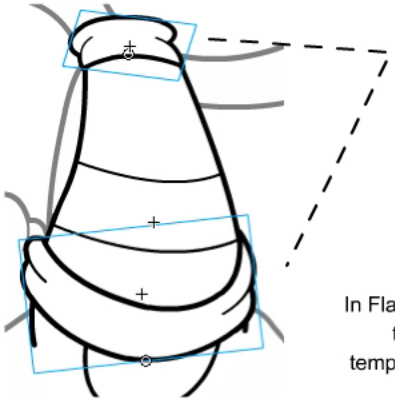




Duplicate the bodycomp symbol and rename it to "bodycomp-002." Inside of the bodycomp-002 symbol, Duplicate the body symbol and rename it "body-002." Inside of body-002, I am going to perform the same steps that I made on the arm. Once completing the new body pose, exit the body-002 symbol into the bodycomp-002 symbol. Good thing I left the collar and ruffles separate, now I can scale, rotate and skew these symbols using the transform tool (Q) to make them fit onto the new body pose, it sure beats drawing new ones!

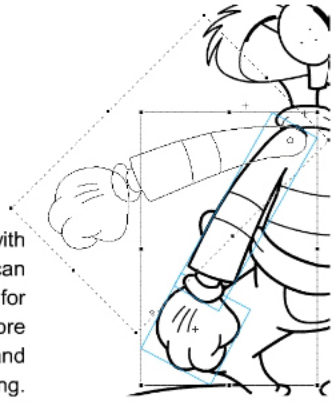


New body pose



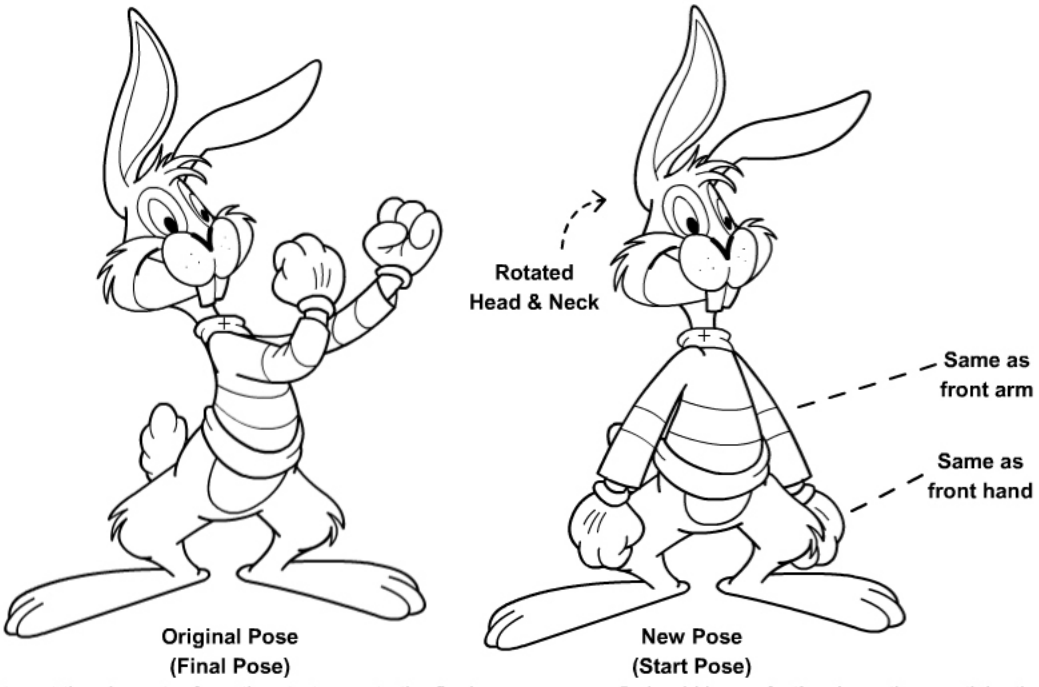
scaled, rotated and skewed to make fit

In Flash, if you select 2 symbols with the Transform selected you can temporarily change the edit point for both symbols, making it more convenient for rotating and squashing & stretching.

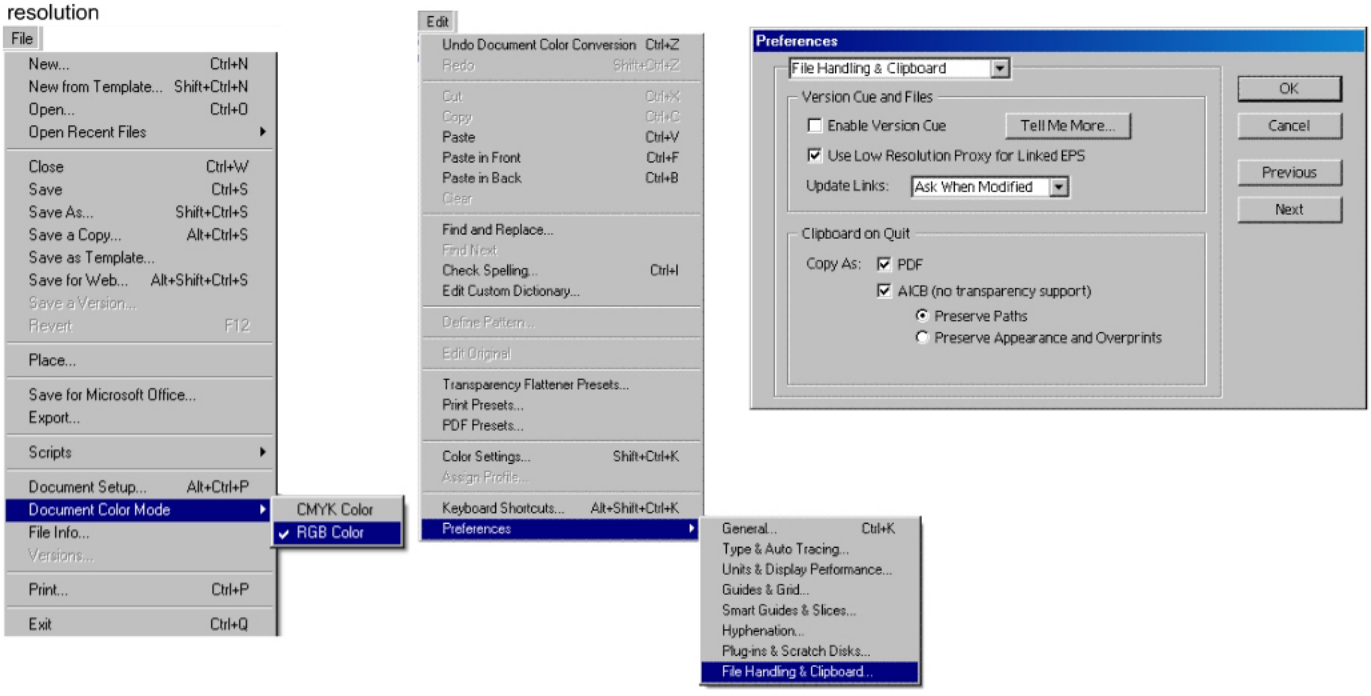


Blocking

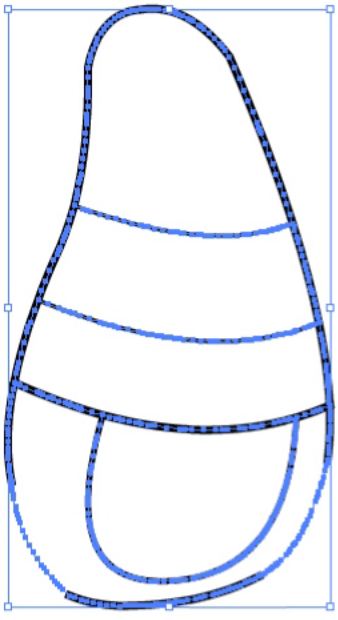
Now that I have the new drawings I need, I'm going to block out the character's first pose by moving and rotating the symbols around. Also, the back arm should be straight down, I am going to copy the new front arm pose, paste it on the back arm layer and flip it horizontally (Modify>Transform>Flip Horizontal). I am going to do the same with the rabbit's front hand.

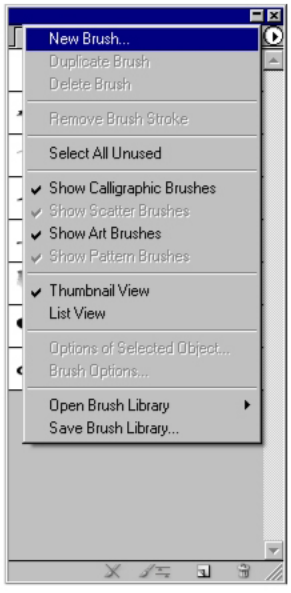


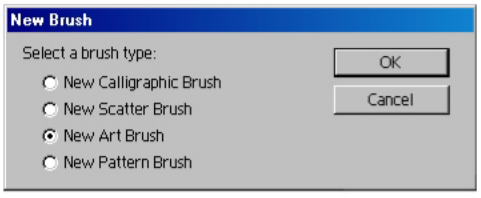
My objective now is to get the character from the start pose to the final pose, so pose 2 should be an **Antic**. An antic or anticipation is used to get from one pose to another. You do not have to antic an action every time, especially if the movement is subtle. However if the movement is a broad action, an antic should be executed. An antic always moves in the opposite direction of the following action, since the character will be throwing his arms up into a boxing pose, we need to bend its body down and raise its arms into a bent position; I know we just straightened the arms and body, but it will be fun drawing new bent poses, trust me. Before making the antic, on frame 9 click and drag to select all of the layers starting at the top. Insert keyframes (F6), so our final pose is held in place while we create the antic on frame 5. First, to create a bent body we are going to use the cool art brushes in Adobe Illustrator. Right-click and duplicate the bodycomp-002 symbol and rename it to "bodycomp-003." Inside the bodycomp-003 symbol, right-click and duplicate the body-002 symbol, rename it "body-003." Select the artwork, copy and paste it directly into Illustrator. In Illustrator, make sure the settings are properly set. Go to File>Document Color Mode>RGB. This is so none of the colors will be adjusted between the two programs. Now go to File>Preferences>File Handling & Clipboard, make sure that under Clipboard on Quit the settings are on Copy as PDF, AICB, and Preserve Paths, otherwise when artwork is copied back into Flash it will look like it has low resolution

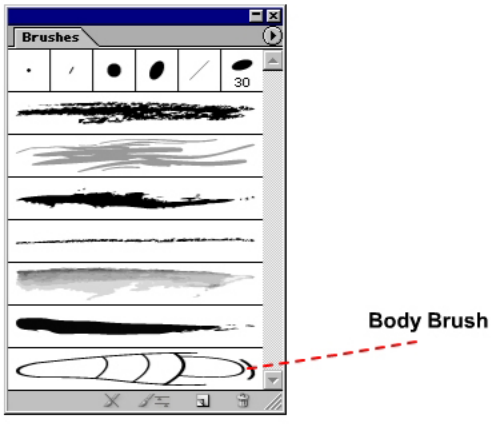


Open the brush library in Illustrator, Window>Brushes. Select the body artwork and click the little arrow button in the upper right-hand corner of the Brush palette, select "New Brush." A window will pop up asking what kind of brush to make, select "New Art Brush" and click OK. The body is now a brush.

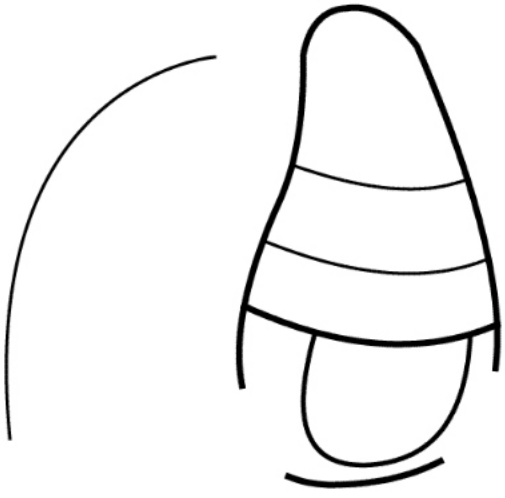


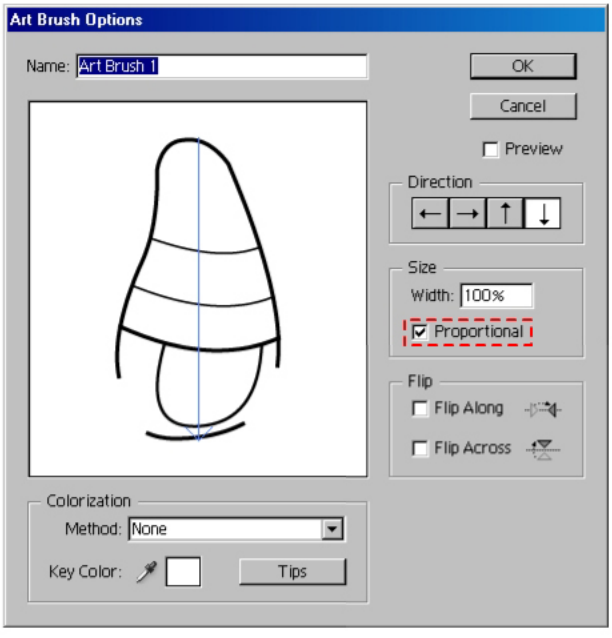


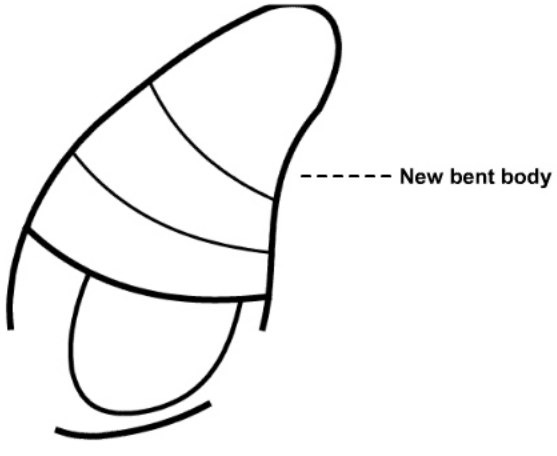




Using the pen tool, create a curved line about the same size as the body. Now select the line and click on the body brush. You, my friend, now have a bent body pose. If the body appears to be fat, check the stroke size and make sure it is set on 1pt. If it still appears to be too fat, double-click on the brush in the library to open its properties, make sure that Proportional is checked off, this should do the trick, if it didn't, better luck next time. Also if the body is upsidedown use the Direction buttons to set it upright.



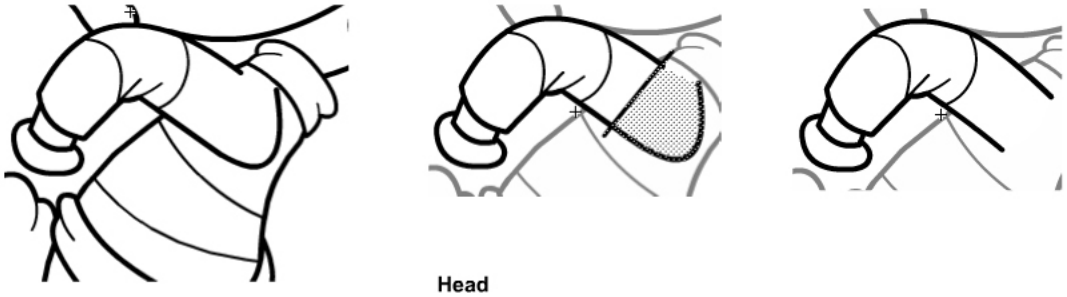


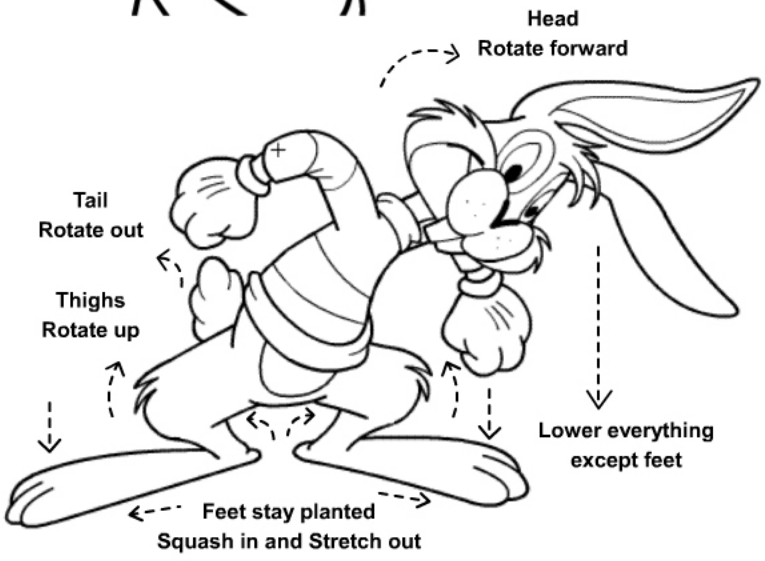


Copy and paste the new body pose into flash inside of the body-003 symbol. The artwork from Illustrator is imported as Groups, select all of the groups and Break (Ctrl+B) them (because groups are bad news). Make sure the new pose is registered to the symbol's original position. Exit the body-003 symbol to the bodycomp-003 symbol, use the Transform Tool (Q) to fit the collar and ruffles symbols to the new pose.

More Blocking

Create new bent arm poses for the antic by copying and pasting the armR symbol from the final pose and paste it on the front arm layer on frame 5. Rotate the arm about 180 degrees. Right-click and Duplicate the armR symbol, rename it "armR-003." Inside of armR-003, let's get rid of that pesky shoulder. Draw a line through the artwork to make the separation, select the half we don't want anymore, now delete it. Now we have all of the artwork we need to create the antic for pose 2. Block out the character's second pose by moving and rotating the symbols around. Like the first pose, copy and paste the new front arm pose to the back arm layer.



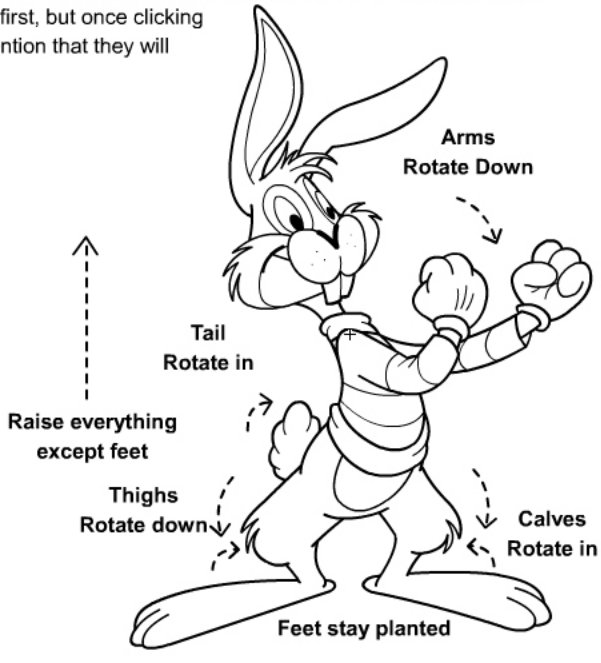


Do you wanna know a secret trick that I discovered, I will only tell you if you read this: **The Group Trick-** To keep the foot planted while squashing and stretching can be difficult since the edit point is located at the ankle. While squashing it may only allow you to squash from bottom up but not top down. The only way to get it to squash correctly without having to reposition the foot, the edit point must be moved to the bottom of the symbol. However, if the edit point's position is changed across the timeline it can create disaster when motion tweens are used. My trick around it is by **Grouping** (Ctrl+G) the symbol, changing the edit point to where you need it, making the transformation, and then **breaking** (Ctrl+B) the group. Grouping a symbol preserves its edit point, the group has its own edit point to adjust so you can transform a symbol and have full control of the axis you are transforming to.

Caution: Groups are very troublesome misfits in Flash land, you do not want to use groups for any animation purposes, they are only good for changing temporary edit points and then breaking immediately afterwards. Utilizing groups in any other way will turn a normal scene into a nightmare. Groups may look like symbols, but they are not, they are wannabes. Since they are trouble, they are not allowed in the library, hence every group is a nameless loner out on the timeline. Nowhere along a timeline will you find the same group. They do not work like symbols, where if you change the artwork in a symbol, it will change all across the timeline. Groups don't work that way, they are always interpreted as different art even if they look the same. They also do not tween well, they might at first, but once clicking inside a group after setting a motion tween, the movement end up wonky. Did I mention that they will bog down a scene's playback? **Groups are trouble, you've been warned!**

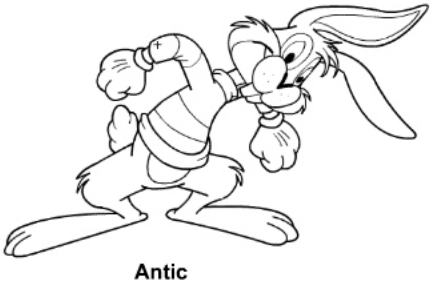
For Pose 3, create an **Overshoot**. An overshoot is when the pose goes beyond the final pose only to settle into it afterwards. I don't know a better way to explain it, but I can say they make actions look great! Before making the overshoot, on frame 13 click and drag to select all of the layers starting at the top. Insert keyframes (F6), so our final pose is in for the settle. To make the overshoot, work off of the final pose. Simply raise the rabbit up past the final pose, keeping its feet planted, by repositioning the symbols using the Transform Tool (Q). Luckily we do not need any new drawings for the overshoot. Notice, I rotated his arms down, this is because the force of everything moving up is pushing the arms down creating a drag. I tend to make my overshoots subtle, if they are too exaggerated in Flash, the animation can have a "Flashy" result.

Now we are done with blocking out our animation. The final (original) pose, the settle should already be in place on frame 13.



Main Poses

Start Pose



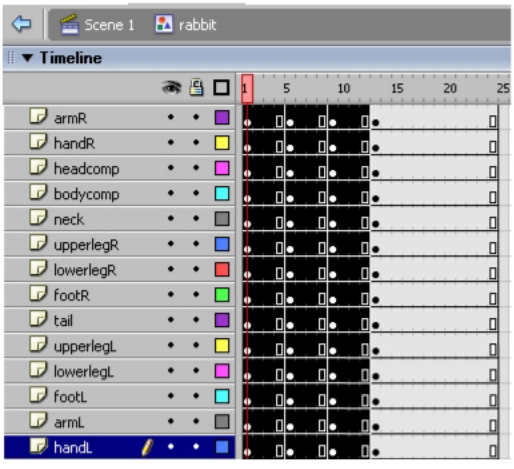
Antic

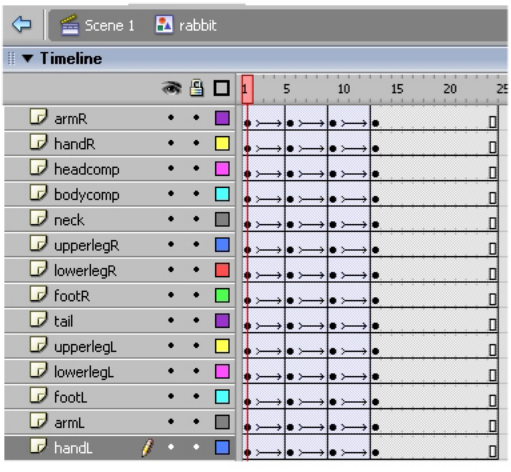
Overshoot

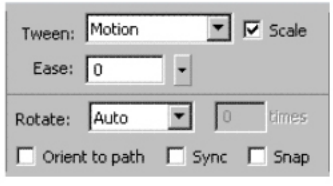
Settle

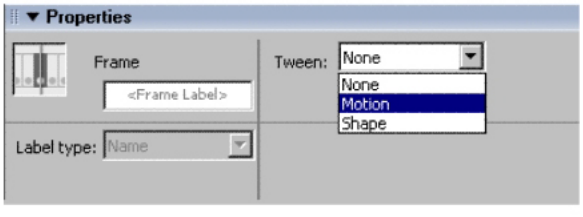
Tweens (again)

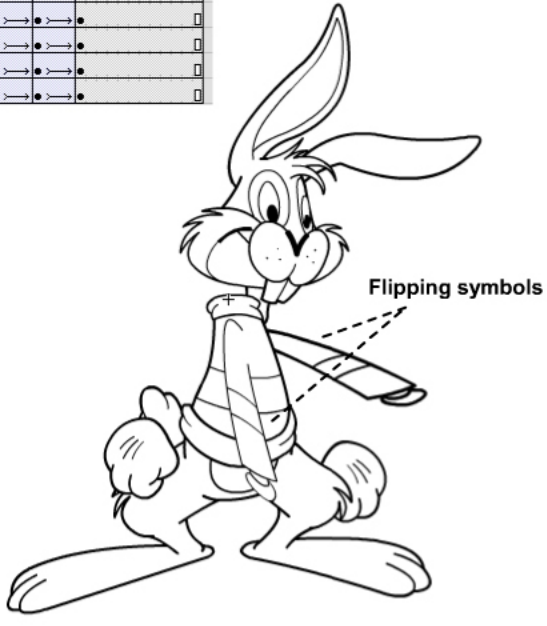
In earlier chapters I have already discussed setting motion tweens, here's our chance to finally use them. Select all of the frames inbetween the keyframes, go to the properties panel, where it says "None" select "Motion." Make sure that the Scale box is checked and Rotate is set to "Auto" and Orient to Path, Sync, and Snap are unchecked. Now the keyposes will be automatically inbetweened. However, some of the symbols may flip, and the timing is very even and stiff, we will later have to go in and make some adjustments to get this animation to look awesome.





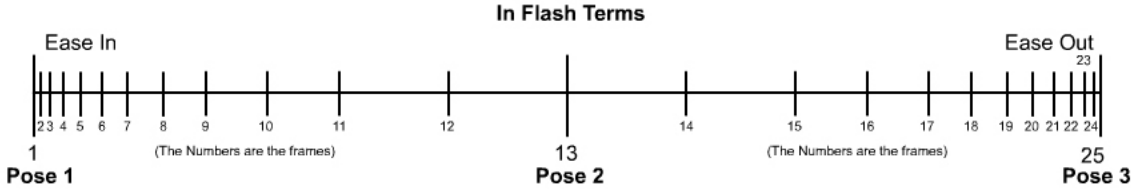




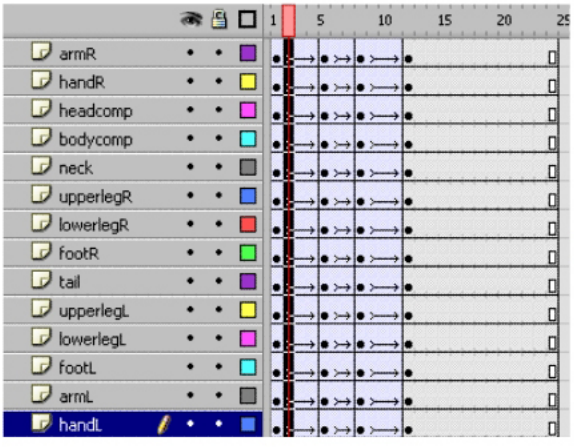


Easing

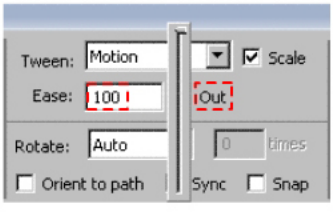
To make timing less even, Flash has the ability to apply eases to the tweens. Easing is a term used in traditional animation as well as in Flash. There are two types of easing, Ease In and Ease Out. However, the traditional and Flash eases are reversed; in traditional terms a Flash ease in is referred to an ease out or slow out which means more inbetween poses are closer to the start position, and a Flash ease out is referred to an ease in or slow in which means more inbetween poses are closer to the end position. Though it can get confusing trying to explain eases when their names are the opposite between both mediums, I will only use eases in Flash terminology since this is a Flash course.



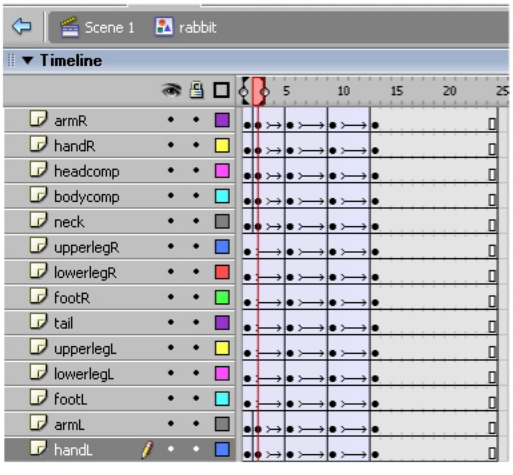
Between Pose 1 and Pose 2 of the character, set the tweens on ease out. Since the rabbit is anticing before an overshoot, the rabbit should start off quickly lowering and then slow down at the end into pose 2 so there will be more of an impact when the rabbit animates into the overshoot pose afterwards. To set the tween on ease out, select all of the layers between pose 1 and 2, then in the properties panel where it says "Ease" the number in the box should be set on "0" (that means there isn't an ease applied), click and drag on the little arrow next to the number box up until you reach 100. It should now say "Out" next to the little arrow.



Setting an ease on 100 usually has the best results, sometimes 100 may be too much, if so, set the ease on 50. I rarely use any numbers inbetween.



Since the arm and body symbols are different between pose 1 and 2, they are not going to tween perfectly, in fact it looks bad. So what to do to get around this mess is to pop the symbols in pose 1 to the symbols in pose 2 without any tweens inbetween the two. Since the tween is set on an Ease Out, the gate between the first and second frame is very wide, this is where we can pop the pose. On frame 2, insert keyframes on the arm layers, hand layers, body layer, head and neck layers. Copy over the keyframes on frame 5 to those on frame 2 and reposition the symbols so the image is a nice one; make sure you re-set the ease on the tweens, they are probably back on '0'. Now this tween should look beautiful.

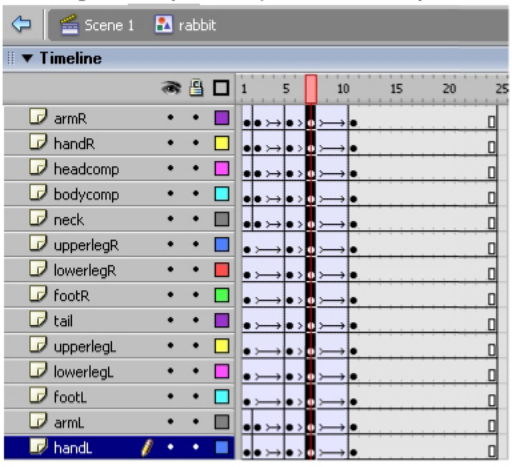


Keyframes on Frame 2

Repositioned on frame 2

Fixing Tweens

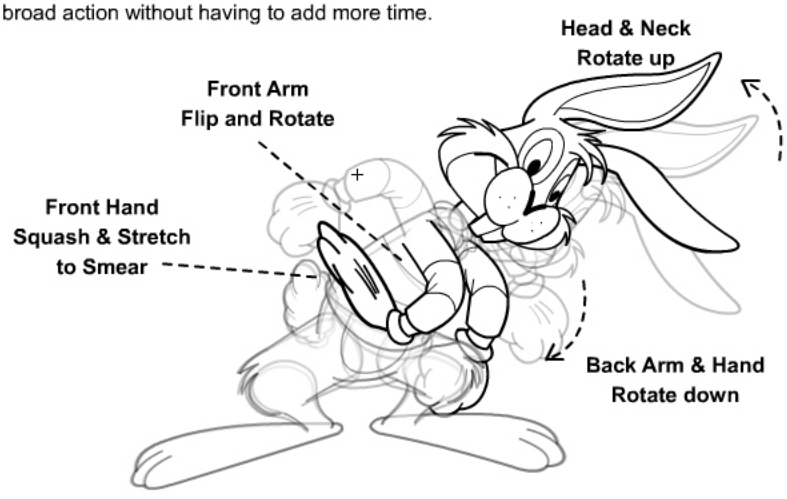
The time between the antic and the overshoot should be snappy, make the tween between frames 5 and 9 an Ease In at -100. Ease In's work best when transitioning from one pose to a completely different pose, it helps hide the switch between two different drawings. There is still too much time between these two frames, select all of the keyframes on frames 9 to 13 and drag them over to frame 7, so there is only one frame of tweenage. The symbols flip and move really bad during this tween due it trying to inbetween different symbols, so there's some more fixing to do.



Frame 9 moved to frame 7

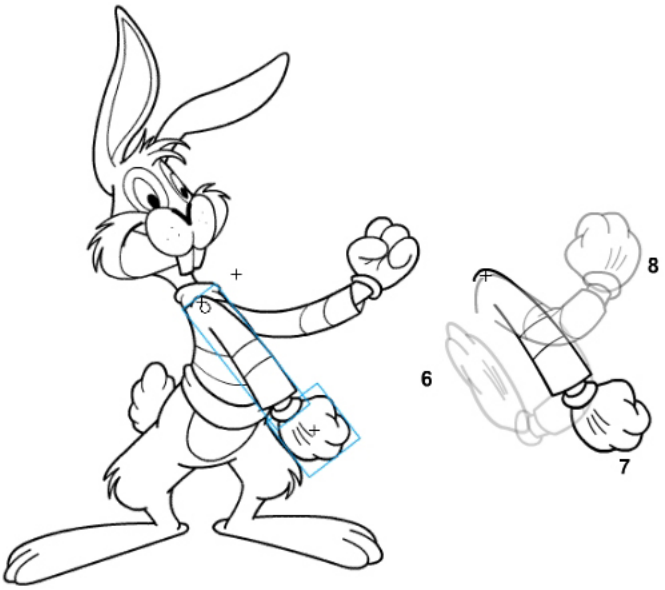
Bad tween

Add keyframes to the arm, hand, head and neck layers. Reposition the symbols to better inbetween the two poses. Flip the front arm and rotate it so the arm appears bending backwards. This will make the arm look like rubber hose animation which we do not see a lot of in Flash animation. Smear the front hand by squashing & stretching the symbol, this will help the inbetween make a smoother transition from two poses that have a broad action without having to add more time.



From the overshoot to the settle, the action should start off fast to a slow stop. So add an Ease Out at 100 to the tween between frames 7 and 11. The inbetween looks too stiff and flashy, let's go through and cherry this animation out.

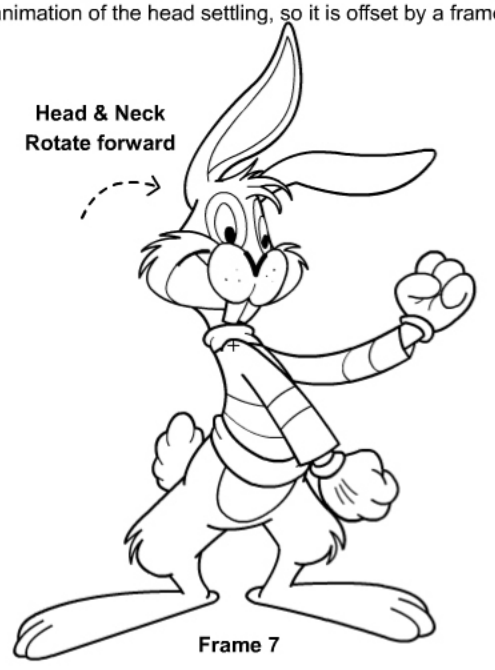
Not a good transition

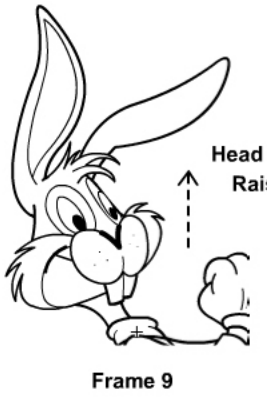


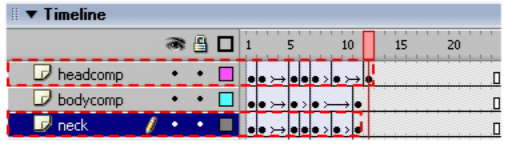
On frame 8, add a keyframe on the front arm & hand layers. On frame 7 copy and paste the armR-002 symbol to help the motion by giving the two arms, bending in opposite directions, an inbetween using a straight arm. Make sure the ease is still set at 100. Now the arm should have a nice ease into the settle.

Fixing Tweens

On the head and neck layers make a keyframe on frame 9, on frame 7 rotate the head forward so it will drag from the rest of the animation. On frame 9, raise the head and neck up, now it should settle downward. The tweens between frames 7 and 9 should be set on 0 to prevent slowing down or speeding up. On frame 12 on the head layer, add a keyframe (F6) and remove the keyframe (Shift+F6) on frame 11, to extend the animation of the head settling, so it is offset by a frame.

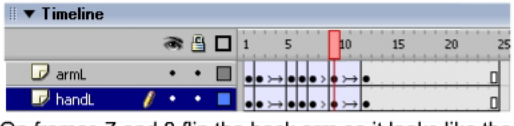




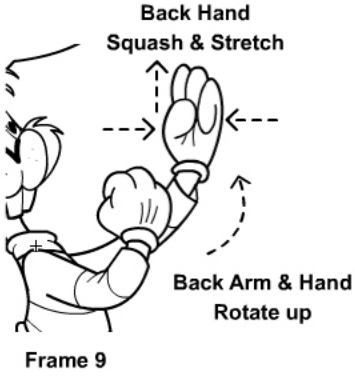


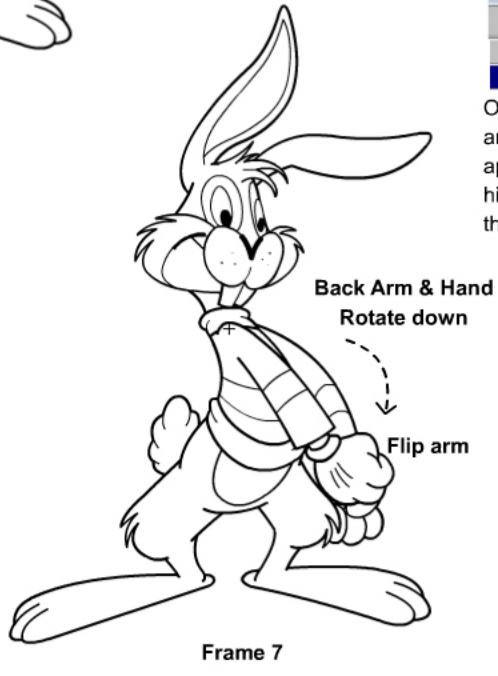
This is what the head and neck layers should look like

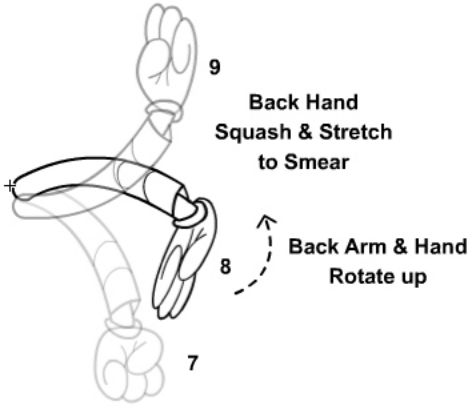
On the back arm and hand layers make a keyframe on layer 9. Overshoot the arm and hand by rotating the symbols up past the position of the final pose. For a cartoony effect, squash & Stretch the hand a bit. Ease In at -100% between frames 7 and 9 to give it that extra punch. On frame 12 on the arm and hand layer, add a keyframe (F6) and remove the keyframe (Shift+F6) on frame 11, to extend the animation of the arm and hand settling, so they are offset by a frame. Ease Out at 100% between frames 9 and 12.



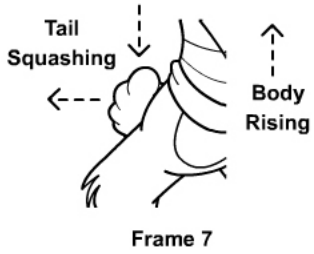
On frames 7 and 8 flip the back arm so it looks like the arm is bending backwards due to the force being applied to it as it moves up. When the arm reaches its highest pose on frame 9, have it bend forward to give the same effect as it settles rotating downward.

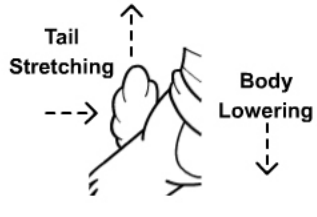






Insert a keyframe on frame 9 on the tail layer. On frame 7, squash & stretch the tail symbol making it short and fat. On frame 9, squash & stretch the tail so it is long and skinny. This will make the tail appear to be reacting to the forces of gravity. On frame 7, the body is moving up putting force on the tail to flatten, and on frame 9 the body is settling down making the tail stretch up dragging behind the body action. On frame 12 on the tail layer, add a keyframe (F6) and remove the keyframe (Shift+F6) on frame 11, to extend the animation of the tail settling, so catches up to the body a frame late. Ease Out at 100% between frames 9 and 12 and remove the ease between frames 7 and 9, so it is at 0. I hope you were able to follow all this! Trust me, it's easier to show than to tell.

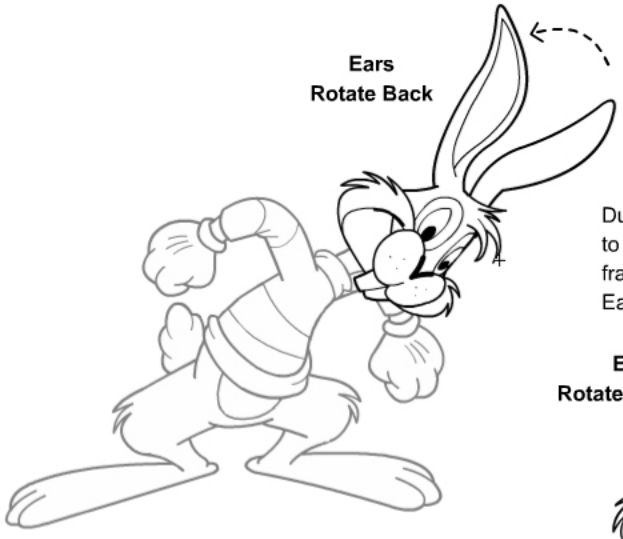


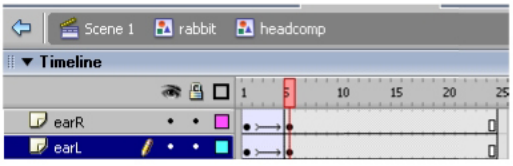


I bet you didn't think animating in Flash would be this much work, **WELL IT IS, THAT'S WHY IT'S CALLED "WORK!"** There isn't an Animate Button, the rumors going around town are wrong. Tweens give a general idea of how something should move, but most of the time they need some tweaking. Sorry to kill the fantasy, guys.

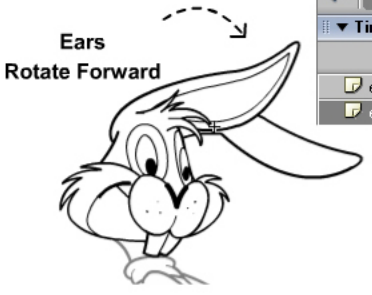
Nested Animation

Now that we are finished inbetweening the keyposes, the animation is still a bit stiff. If we go inside of the headcomp symbol, we can add some overlapping ear animation that will really bring this character to life. Inside the headcomp, there should be the same amount of frames on the timeline as on the timeline in the character comp, 24 frames. On frame 5, in the character comp, the rabbit antics down, forcing the ears back. Add keyframes to the ear layers on frame 5 and rotate them back. Insert a motion tween between frames 1 and 5, Ease Out at 100%.





During the overshoot on frame 7, the head is traveling backwards forcing the ears to move forward in the opposite direction. Add keyframes to the ear layers on frame 7 and rotate them back. Insert a motion tween between frames 5 and 7, Ease In at -100%.

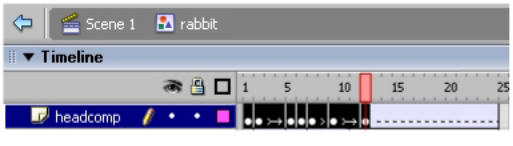


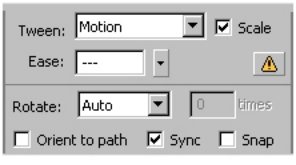
For the settle on frame 12, the ears should return to their rest pose. To give them a little bounce, I am going to give them a tiny overshoot past the final pose, and then settle on frame 15. Add keyframes to the ear layers on frame 12 and rotate them back. Now add a keyframes on frame 15 and position them to the rest pose (frame 1). Insert a motion tween between frames 7 and 15, Ease Out at 100%.

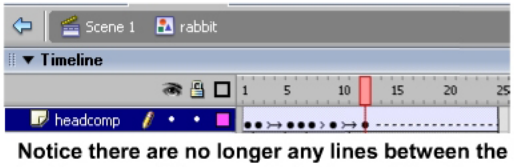
Frame 12

Frame 15

Exit the headcomp symbol to the character comp. Due to all of the moving around of keyframes on the head layer, the instances may be scrambled causing the ear animation to not work properly. To fix this, on the first frame of the head layer, select the headcomp symbol, in the instance panel make sure that the headcomp is set on "Loop" or "Play Once" and the "First" box is set on "1." Select all of the frames on the head layer, in the properties panel, set a motion tween, click "Sync" on and then off. Now all of the instance numbers should correspond with the frames they fall on. The Sync function makes sure that all of the symbols across the layer are in sync with the symbol on the very first frame. This may sound great, however, it only allows you to have the same exact symbol on the one layer. For example, if I changed the motion tweens on the arm layer to Sync, all of the different arm symbols on that layer would be swapped out with whichever arm symbol is on the first frame. Therefore, I would lose all of my animation, and that would be bad. That is why I turn it off right after using it. By right-clicking on the timeline, there is a Create Motion Tween function, except it is no good because the Sync is already on as a default . To make your life easier, use the Tween in the Properties panel.

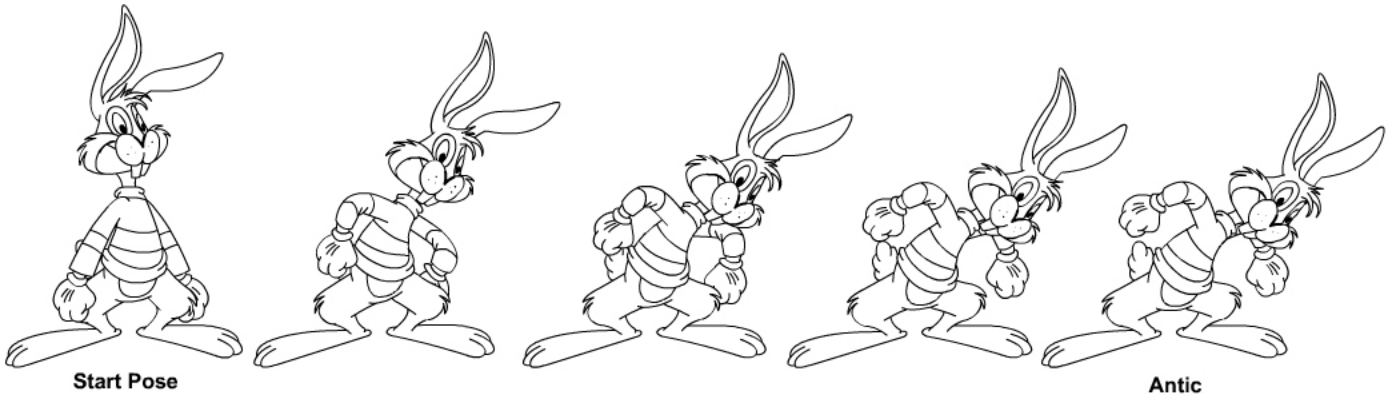






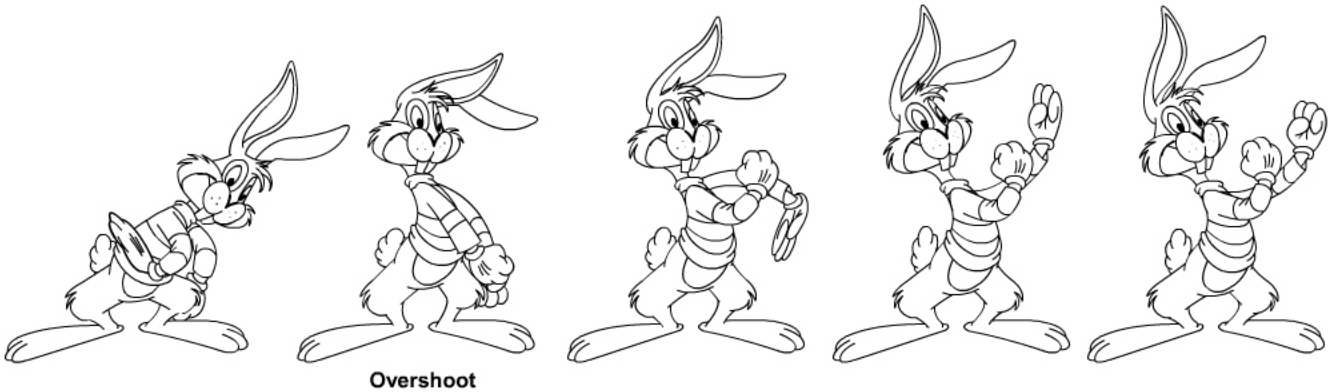
Notice there are no longer any lines between the keyframes and frames, this is how to identify a motion tween set on Sync.

Final Animation

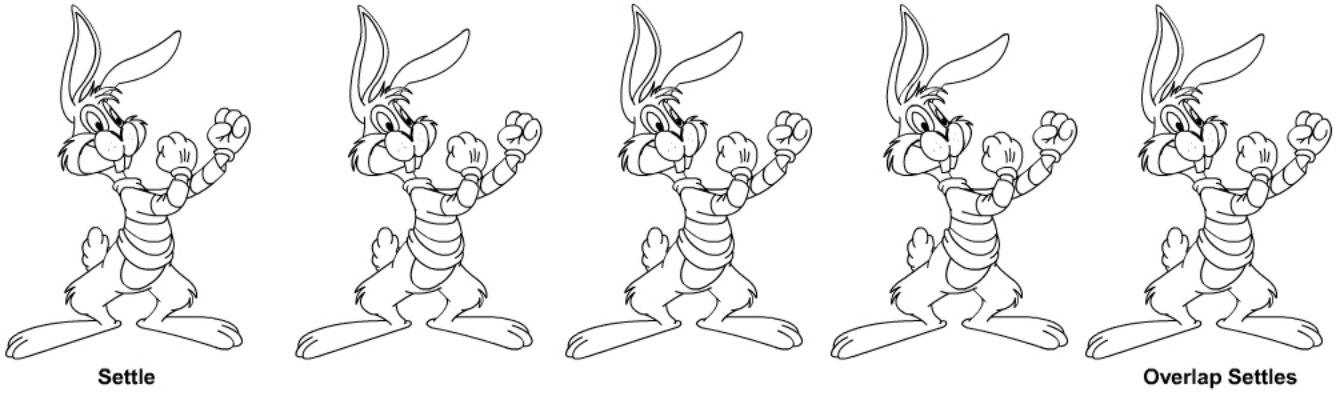


Start Pose

Antic



Overshoot



Settle

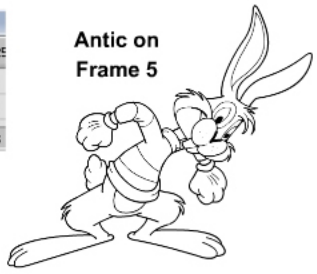
Overlap Settles

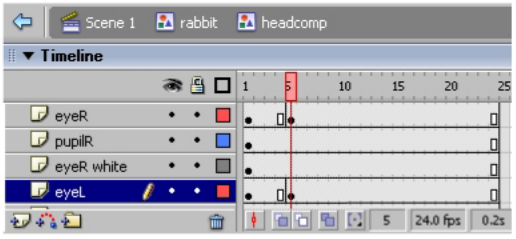
Chapter 6
Facial Acting

Eye Acting

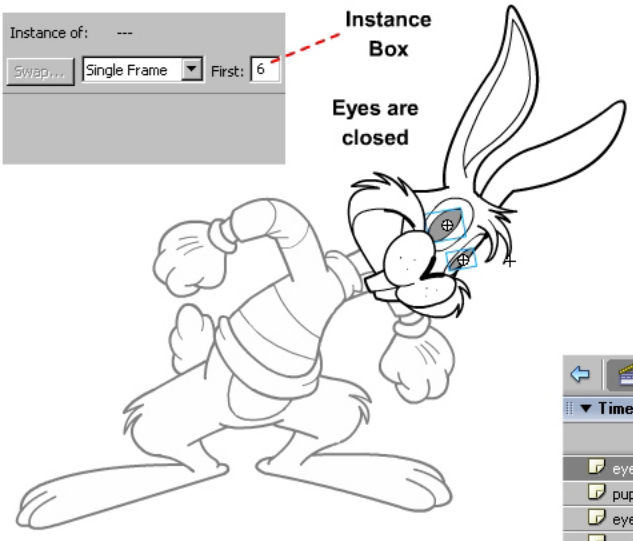
After completing the animation, you might want to add a little more *zing* to your character; if you are lazy, you might not! By adding some eye blinks and what not, your character animation will look a lot cooler in just minutes! Seriously adding blinks and change of expression should really take no longer than 5-10 minutes. To get started, first find a good place to stick an eye blink. While searching for that dream spot, keep in mind that eye blinks work really well when a character looks in another direction, turns its head, or when a character antics. Did I just say "Antic"? The character antics! That is where I will animate the blink.

Frame 5 is where the rabbit hits the lowest point in his antic pose, therefore, frame 5 shall be the instant the rabbit blinks. To make our character blink, double-click your way into the headcomp symbol. Inside of the headcomp, on frame 5 insert keyframes (F6) on both eye layers.

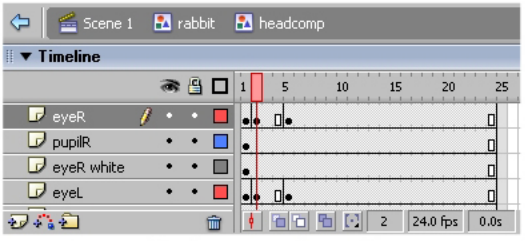




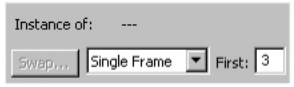
Insert the blink by selecting both eye symbols on the mainstage using the Black Arrow Tool (V) while holding down the Shift key. In the Properties Panel under where it says "Instance of:," type the number 6 in the "First" box or **Instance Box**. If we reference back to Lecture 4, the closed eye pose is on frame 6 inside of the eyecomps, that is why I input 6 in the Instance Box. Your character should now have its eyes closed. Good job!



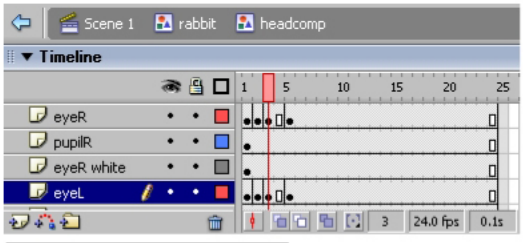
With the final pose of the blink set, we can add inbetween blink poses on the previous frames. Frame 2 is the first frame of the character going into the antic pose, so on frame 2 insert keyframes (F6) on both eye layers. With the eye symbols selected in the Properties panel, input the number 3 in the Instance Box, make sure that the eye symbol is set on "Single Frame". I skipped the second eye pose to the third because there is not enough time to have all of the eye poses I've created to be in this antic. I figure I will make the eyelids Ease Out (Flash Term) to the blink pose, using instant 3 opposed to 2, to create a wider gate between frames 1 and 2.

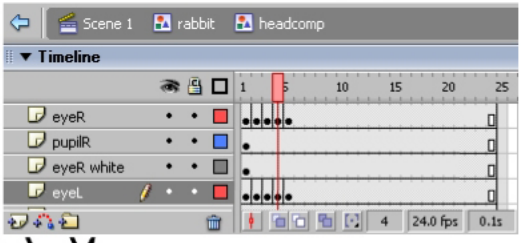


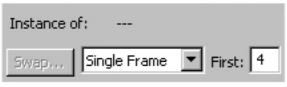
Keyframes on frame 2
on the Eye layers



On frame 3, insert some more keyframes (F6), input 4 into the Instance Box. And to finish it off, insert keyframes on frame 4, and input 5 into the Instance Box.

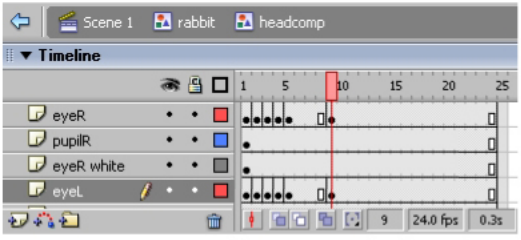






Instances

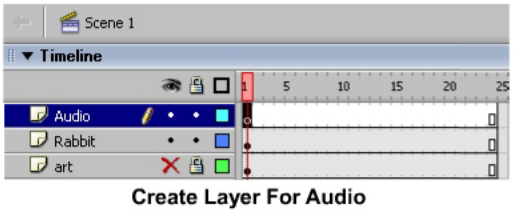
With the blink out of the way, time to open this character's eyes. The head is at its highest pose during the overshoot out from the antic on frame 9. This is where the character's eyes should open. This time we will not add any inbetweens for the eyes to open. By popping the eyes open it creates more of a reaction, like BOOYAH! Do the same as before, on frame 9, insert keyframes (F6) on the eye layers, input 1 into the Instance Box. Now the eyes animate, go ahead and give yourself a pat on the back. How long did that take, 5 minutes? Told ya!



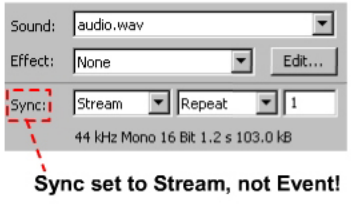
Overshoot on Frame 9, Pop eyes open

Lipsync

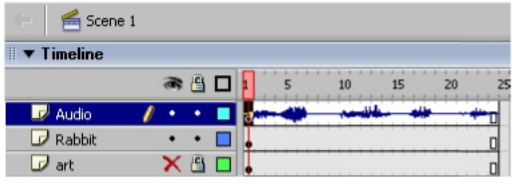
To make use of the mouth chart we created, let's make this character talk. First thing's first, we must have a dialogue track, otherwise we will not have anything to lipsync to. How you get your dialogue track is your problem, I can't teach you everything! Once obtaining an audio track, be it a .wav, .aiff, or .mp3, import it into Flash. **File>Import>Import To Stage** or **Ctrl+R**. Now that we've imported it, where is it? I'll tell you, but first you have to create a new layer on the Mainstage timeline. Rename that layer to "Audio." Click anywhere on this layer, in the Properties Panel, a Sound feature will appear. Where it says "Sound:" click the box and select the file that you have just imported. Be sure to have the Sync set on "Stream," which will allow you to **Scrub** or play sound while scrolling over the track. When set on "Event", once pressing play, the sound will start and will keep going even after the scene ends, it can be annoying. Event is also mainly used for the web, not television. In the Audio layer you can see what the sound looks like.



Create Layer For Audio

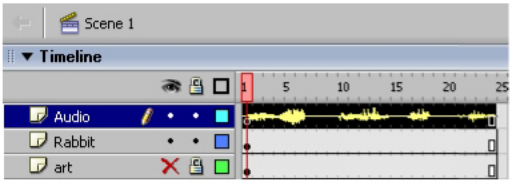


Sync set to Stream, not Event!

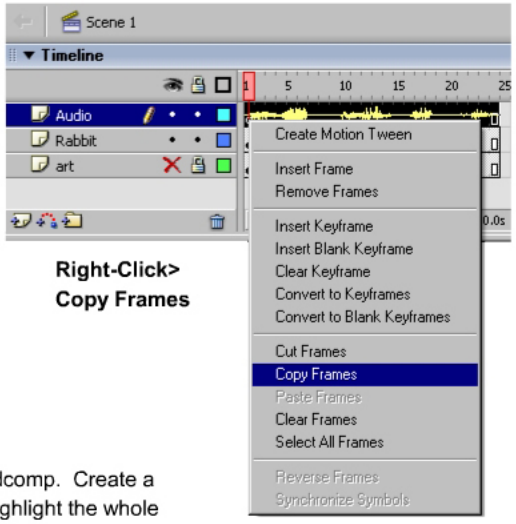


Lipsync

To give the character lipsync, we will need to be able to hear the audio track inside of the headcomp, where we will be animating the mouths. To get the audio inside of the headcomp, click on the layer where it says "Audio," this will highlight the whole audio layer. On frame 1 of the highlighted audio layer, Right-Click and select **Copy Frames**, this will copy everything on this layer.

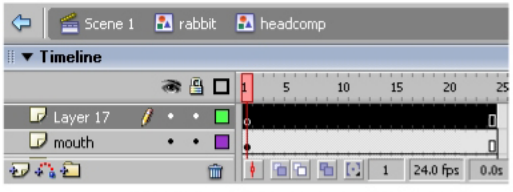


Select Audio Layer

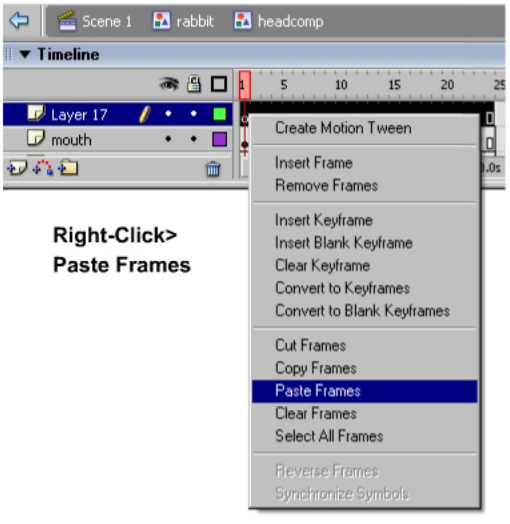


Right-Click>
Copy Frames

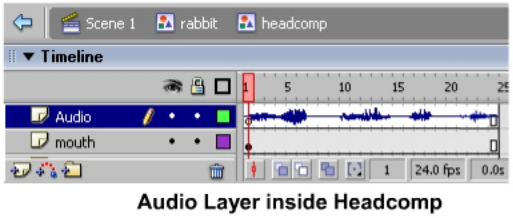
Double-Click on the character until you are inside of the headcomp. Create a new layer on the timeline inside of the headcomp symbol. Highlight the whole new layer by clicking on the layer name, Right-Click on frame 1 and select **Paste Frames**. Now the Audio Layer from the mainstage timeline is inside of the headcomp.



Create and Select Layer For Audio

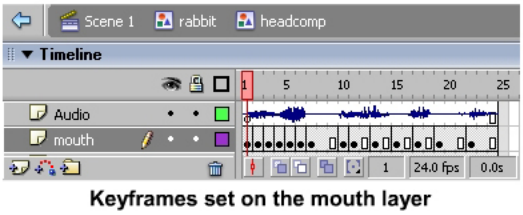


Right-Click>
Paste Frames



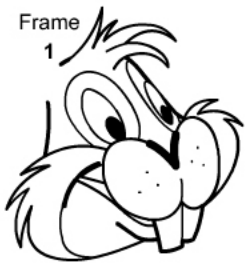
Audio Layer inside Headcomp

With the audio inside of the headcomp, we can get started lipsyncing. The audio track that I imported says "So What Can I Get Ya?!", since you are reading this, you are just going to have to believe me. Like with the eyes, I'm going to set keyframes, this time on the mouth layer, and call on instances from inside the mouthcomp. The instances I call upon, depend on the sound in the audio track and the pose of the mouth. I am going to Scrub the audio track and decide on each frame of sound, which mouth pose best matches, and input the frame number of the pose in the Instance box. I would love to teach you how to lipsync, but I would hate to waste paper trying to explain when books like the Preston Blaire or Richard Williams books can explain lipsyncing way better. Instead I'll show everything I did frame by frame and attempt explain the phonetics and instances (See next page). Well that's it, you've actually read all the way to the last line; by the time you get to the next period, you will hopefully know how to animate in Flash or at least have a better understanding of how it works. Good luck!!!



Keyframes set on the mouth layer

So



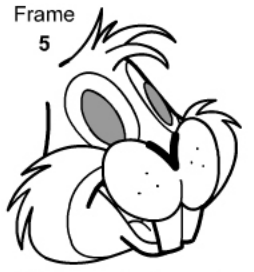
S sound using ee mouth
Instance **2**

Ah
Instance **3**

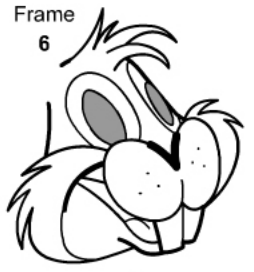
Oh
Instance **5**

What

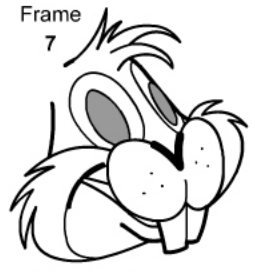
Oo
Instance **6**



inbetween to Ah mouth
Instance **4**

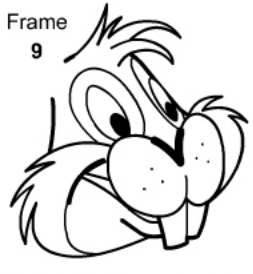


Ah
Instance **3**



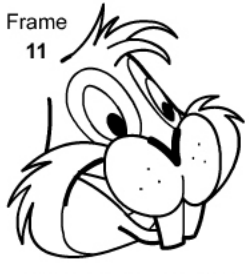
T sound using ee mouth
Instance **2**

Can



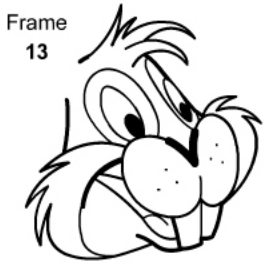
K sound using ee mouth
Instance **2**

Ah
Instance **3**

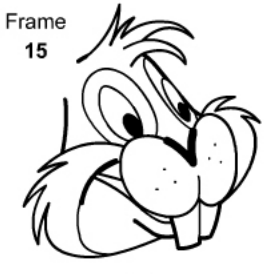


N sound using L mouth
Instance **7**

I

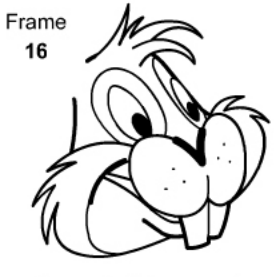


Ah
Instance **3**



EE
Instance **2**

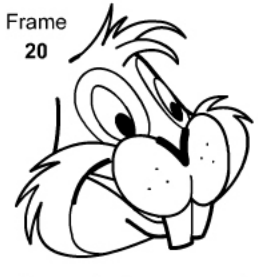
Get



G sound with ee mouth
Instance **2**

Ah
Instance **3**

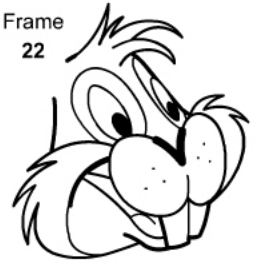
Eh sound using ee mouth
Instance **2**



T sound using ee mouth
Instance **2**

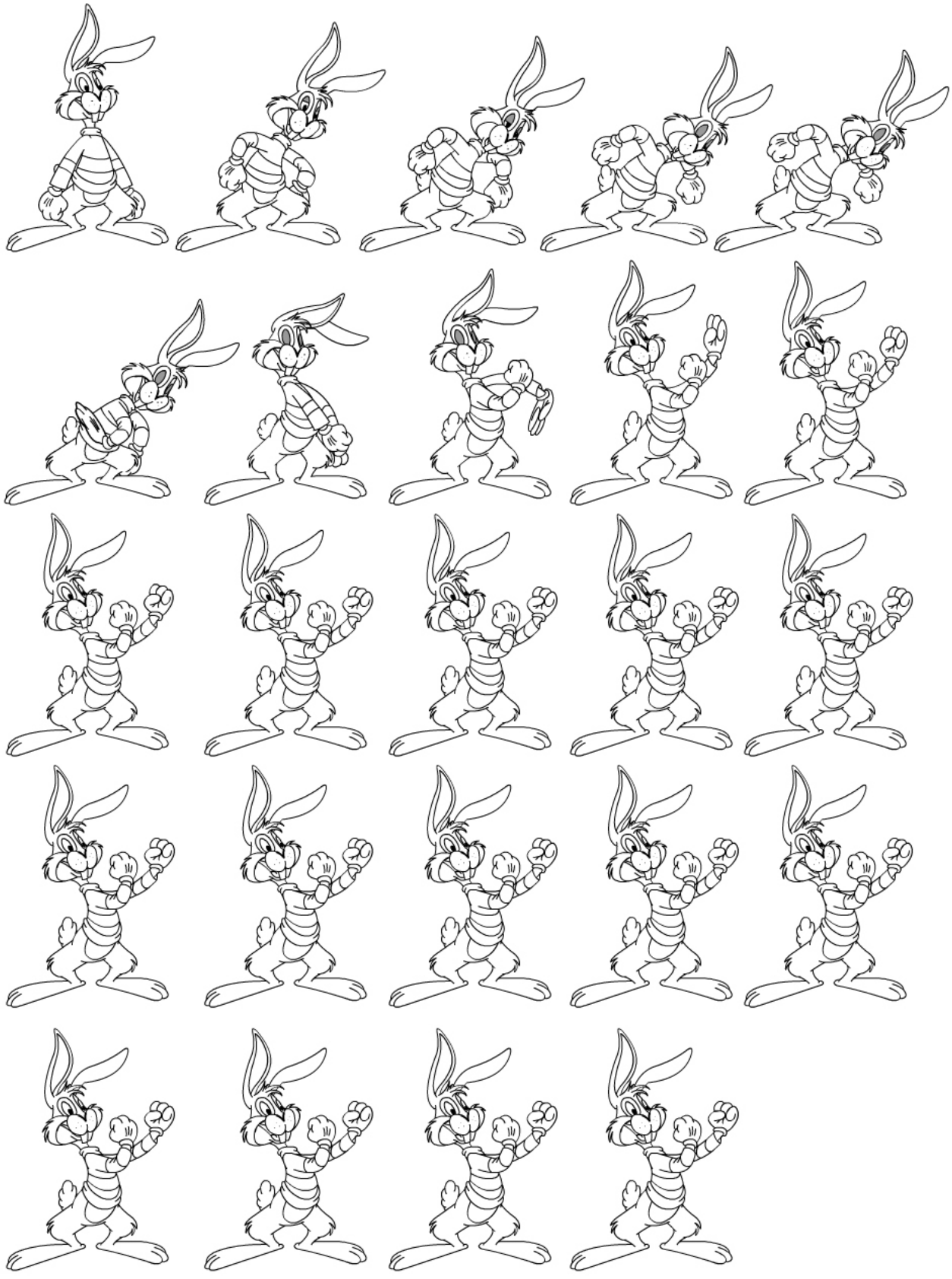
Ya

EE mouth
Instance **2**



Ah
Instance **3**

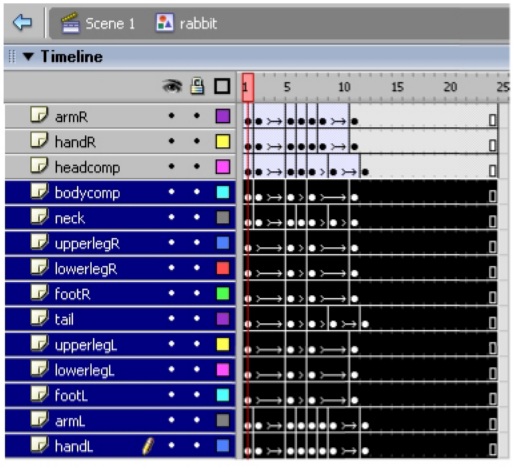
Final Final Animation

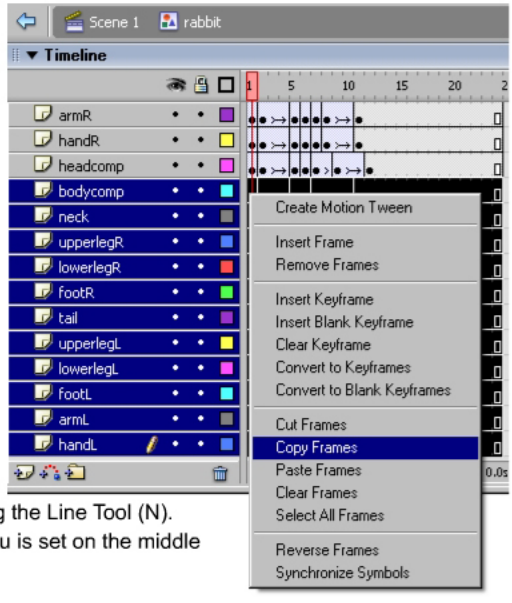


Chapter 7
Special Tricks

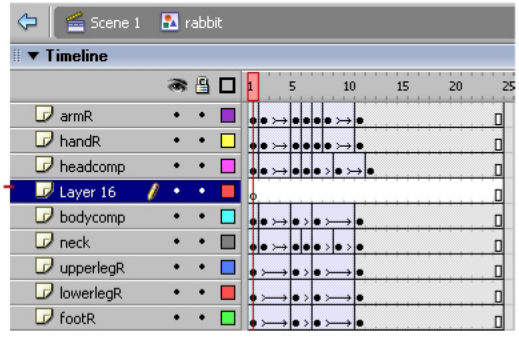
The Pringle

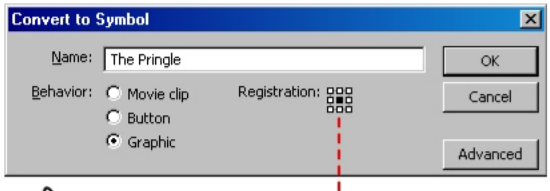
Here's a little trick that I made, yes me. I take complete credit for this one, in fact I named it **The Pringle**. I'm not conceited or anything, it's an acronym for **P**osition **R**egistered **I**nside **N**ew **G**raphic for **L**ayer **E**diting (pretty creative, eh). In Flash, it comes with a paste in place feature that you can only use when copying elements on the stage. But what if you want to copy frames and paste the frames in place inside a new symbol, or in other words, how do you flatten an animated sequence into a single symbol? This is where **The Pringle** comes in handy. Before I introduced this trick on the website **www.coldhardflash.com**, the common animator would copy the frames by Right-Clicking on the timeline and selecting Copy Frames or Cut Frames and then in the menu selecting Insert>New Symbol. A new symbol window would open, this is where they would paste the frames on the timeline by Right-Clicking and selecting Paste Frames. Everything at this point seems all good, except when exiting the new symbol, it will take you out to the mainstage with no new symbol in sight. The new symbol is in the Library, making the common animator have to drag the new symbol out on to the stage and attempt to register it to the animation it was copied from. Most of the time the registration would take a while and not even be perfectly registered. **The Pringle** makes it possible to instantly copy and paste frames into a new symbol while registering them to the exact location they were copied from, like magic. This trick is great for making animated cycles into comps. The first step is to select the keyframes of an animated sequence and then copying the frames by Right-Clicking and selecting Copy Frames.





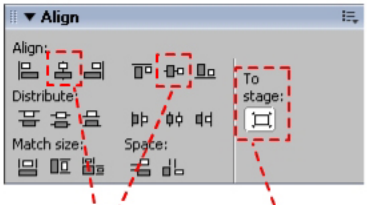
Make a new layer above the topmost layer you've copied from and draw a line using the Line Tool (N). Symbolize the line (F8). It is very important that the Registration in the symbol menu is set on the middle square, or else this trick will not work.





Very important to set in the middle

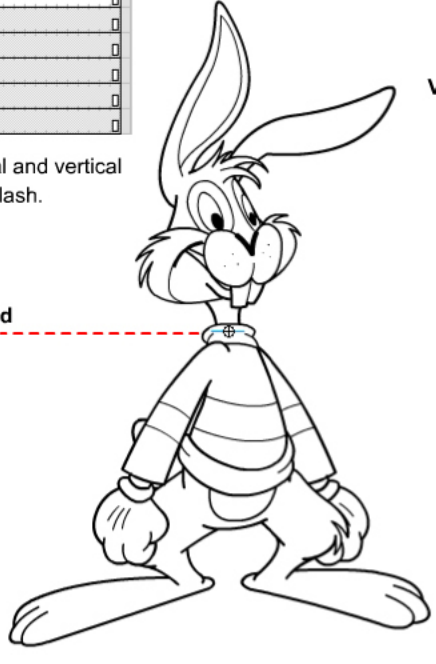
Now center the line symbol to the stage by using the horizontal and vertical buttons in the Align Panel. This will set up the decoy to trick Flash.



Click These

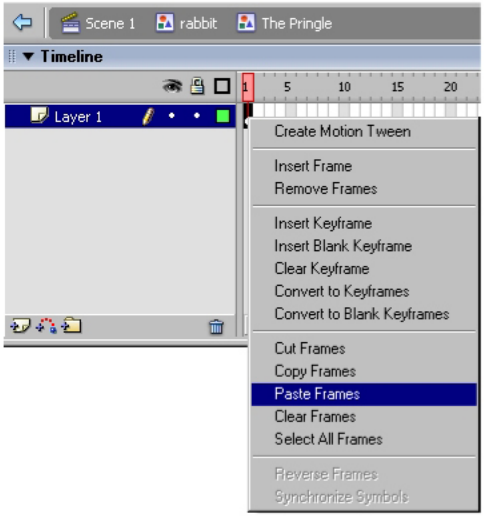
Make sure this is selected

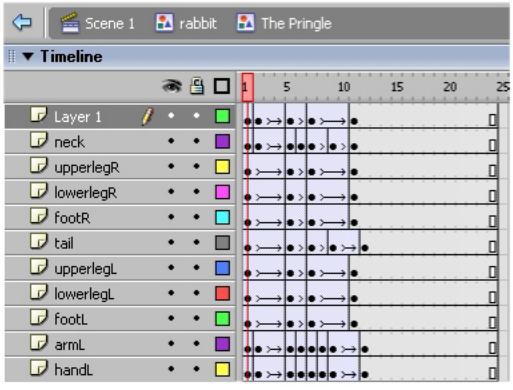
Line Centered to Stage

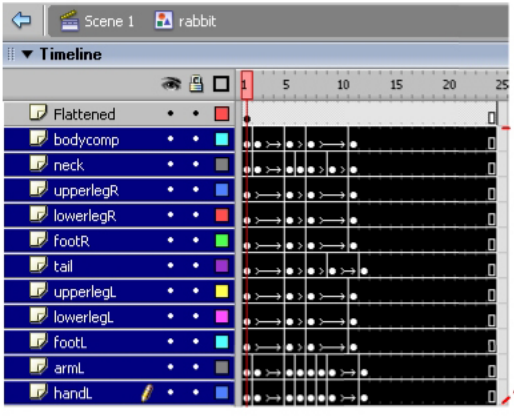


The Pringle Continued...

Double-Click inside of the line symbol, Right-Click on the keyframe inside and select Paste Frames. Tah-Dah!!! If done correctly, the animated sequence should be pasted in place inside of the new symbol. Now exit the new symbol and delete all of the copied layers, they will no longer be needed. There you go, **The Pringle** or **Flatten Sequence Trick**.

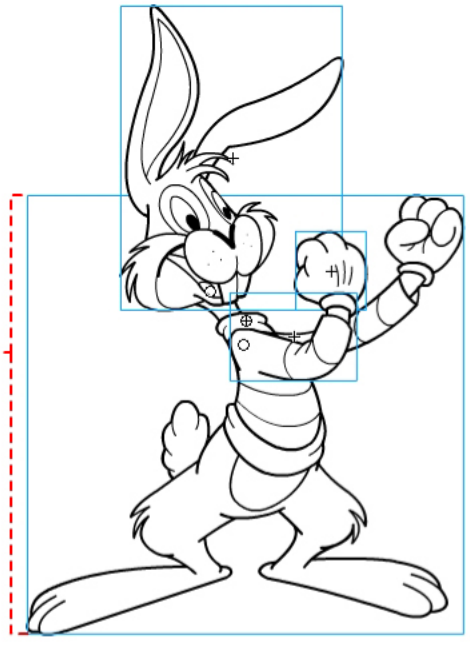


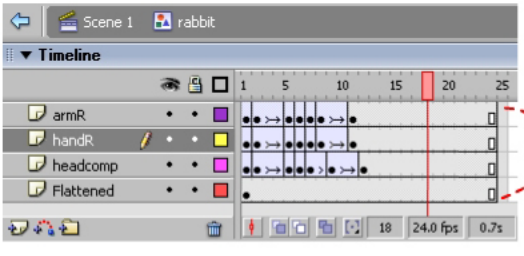




Delete

Flattened Animated Sequence Symbol Completely Registered

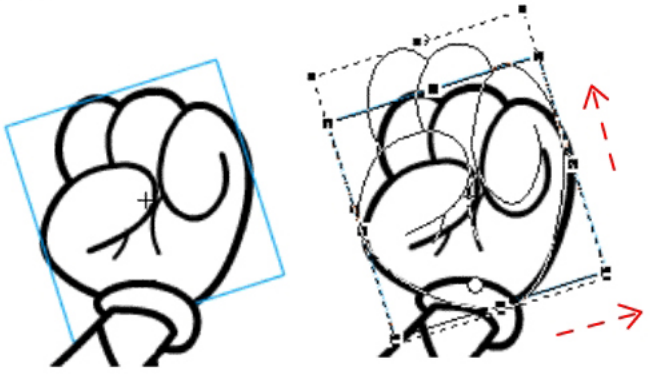




Only 4 Layers in the Character Comp

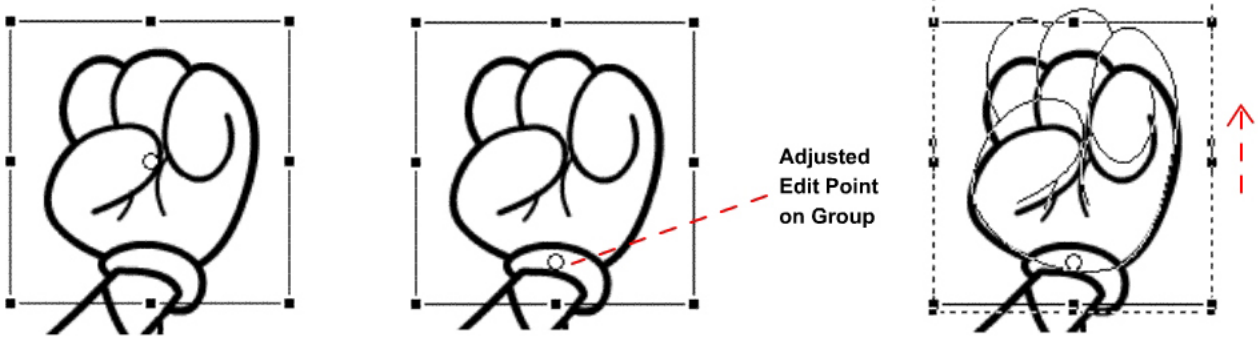
Group Trick

Squashing and stretching symbols can sometimes be a little difficult depending on how the artwork is rotated when symbolized. Take this hand for example. If I wanted to stretch it up and squash it in, because the bounding box isn't straight up and down, I would have to skew it to get better results.



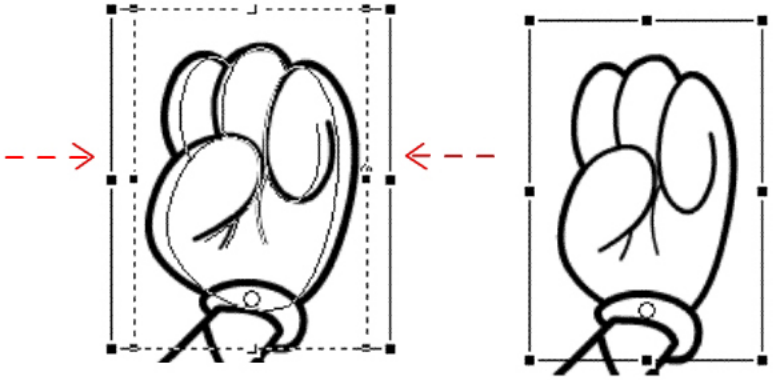
A little trick I often do to get around this is to **Group** (ctrl+G) the symbol. I know, on **pg. 44**, I mentioned that Groups are really bad to use, but what I didn't say was they're not bad if you are only using them as a tool. By Grouping the symbol, it places the asset within a new bounding box that is straight up and down and much easier to transform. Also by Grouping the symbol, also explained on **pg. 44**, I am also able to adjust the edit point to anchor the artwork on a different pivot without affecting the symbol's edit point inside.

Usually when trying to perform this trick on a comp symbol, the edit point cannot be adjusted. This is because the symbol needs to be set on **Single Frame** in the instance properties panel before grouping.



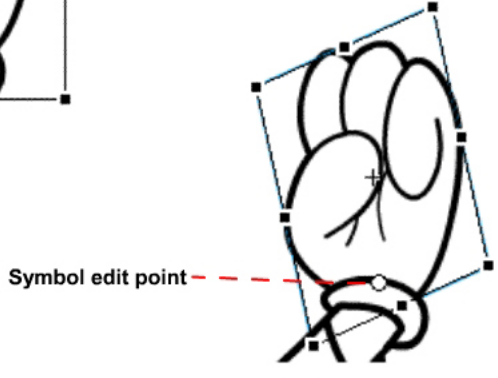
Grouped Symbol

Perfect Vertical Stretch



Perfect Horizontal Squash

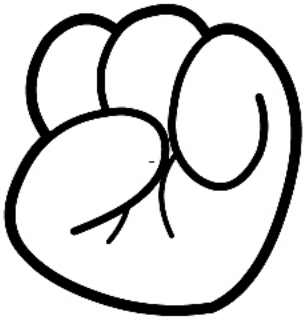
Now for the most important step in the process, **Break** (ctrl+B) the Group to release the transformed symbol. Notice the symbol's edit point is still intact where it was last placed.



Broken Group

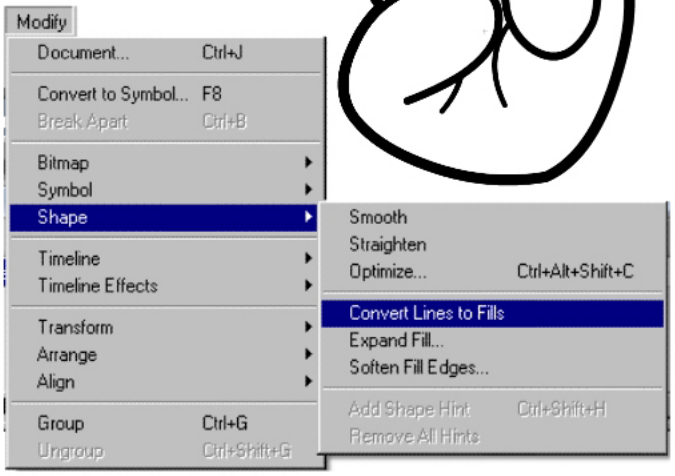
Line Taper Trick

Adding a taper to a Flash line can be a long tedious process. It consists of converting the lines to fills and manually pulling points to get rid of those nasty rounded ends. There are several methods of speeding up the process, here is one of them:



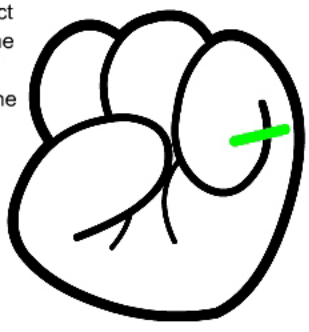
Here, the hand is still all line art, look at those rounded ends, ewwwww!!!

Select the lines and then go to **Modify>Shape>Convert Lines To Fills**

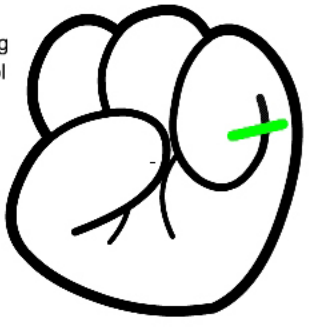


As you can see below, the line art is now a fill. Sometimes the converting lines to fills can drop out lines and can be quite frustrating. Don't punch your computer yet! Check out the next page and read how to avoid that "Flash goodness."

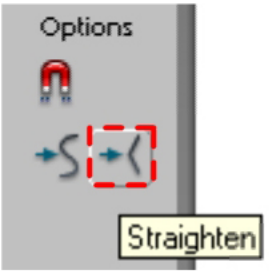
Now intersect the end of the filled line art using the Line Tool (N)



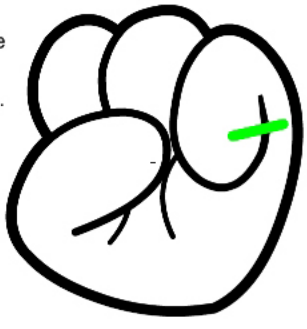
Select that little piece of line using the Selection Tool (V)



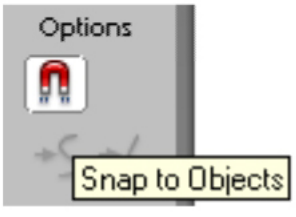
In the toolbar at the very bottom of the list of icons, click the **Straighten** icon several times



Notice now the selection has straight edges.



In the toolbar at the very bottom of the list of icons, click the **Snap to Objects**, the magnet one.

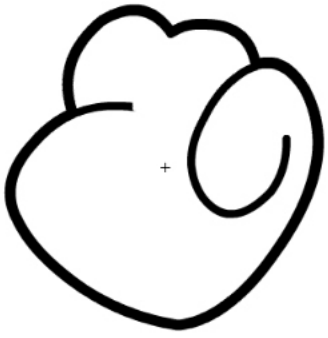


Delete the intersecting line and manually pull the points and adjust the linework to get a taper. It's still tedious yet more convenient than other methods.

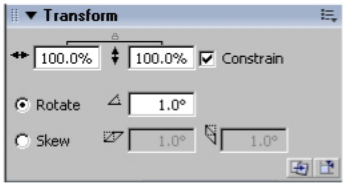
Converting Lines to Fills Trick

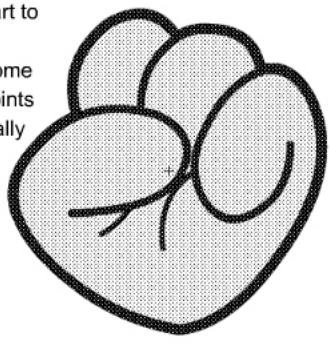
As I mentioned before, converting lines to fills can sometimes drop out lines, here is how I work around it.

Here is the hand when first trying to convert lines to fills. Notice some of the lines have dropped out.



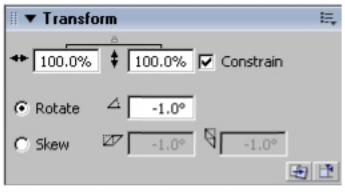
To fix this, the first thing to do is undo (ctrl+z) the faulty conversion, so we have the original line art to work with. Now, select the artwork and in the **Transform panel**, rotate the art by 1.0º. For some reason, Flash does a better job working with points when the art is skewed or rotated. I know, it really doesn't make much sense.

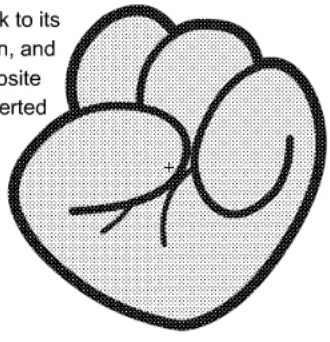




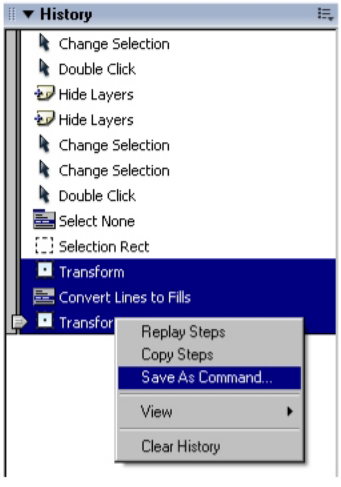
Now if I try converting lines to fills again, I get perfect results. (The art is selected with the white arrow, so you can see that it's converted.)

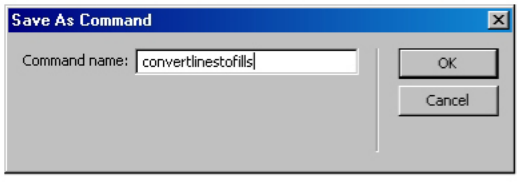
For the last step, the art should be rotated back to its original position. Select all of the artwork again, and in the **Transform panel**, rotate the art the opposite way, -1.0º. There you have it, a perfectly converted line.

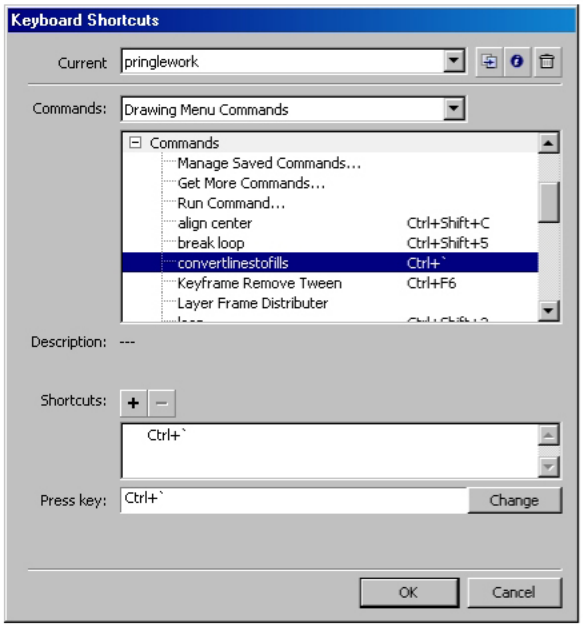




It might seem like this process is a little tedious and annoying, but remember that these three steps can be made into a customized hotkey command by using the **History Panel (pg. 14, 15)**







Now this little trick is only a click of a button.

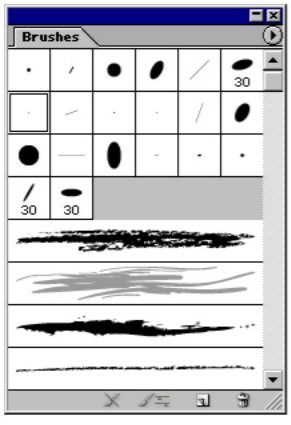
Illustrator Textured Lines

A much faster way of applying a taper (or any texture for that matter) to a line without having to manually pull points is to use Adobe Illustrator. This is a method used on several Flash television productions, including *Foster's Home For Imaginary Friends*, which uses a rough pencil line on all of it's character designs. The steps are exactly like those performed on **pg. 43**, when we bent the body using an Illustrator brush.

I tend to perform these steps after the artwork is symbolized to prevent the stage becoming a huge mess. First, inside the hand symbol, select all of the linetool art. Copy it (ctrl+c).

Now Paste (ctrl+v) the linetool art into the Illustrator application. Notice the ends of the line are already squared off, we are already one step closer to getting rid of those rounded Flash line ends, YAY!

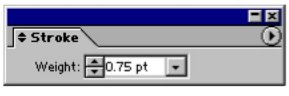
With the line art selected, in the brush palette, select any brush your heart desires.



The line art instantly acquires the texture style of the selected brush. The line can now be adjusted using the stroke panels, changing the direction of the brush in the Art Brush Options (pg. 43), or manually.

If I were to apply a rough pencil brush texture like the one used in *Foster's Home for Imaginary Friends*, my character's hand would look something like this at first. As you can see, a lot of clean up still needs to be done.

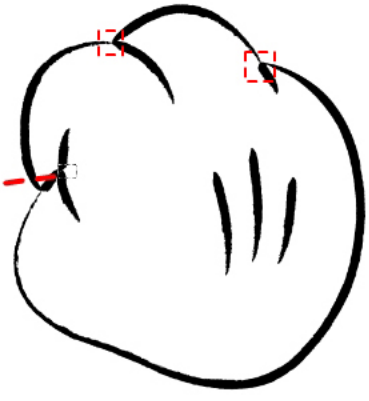
First thing to do is to adjust the stroke. In the Stroke Panel, enter a value and press enter.

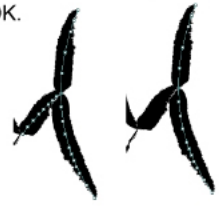


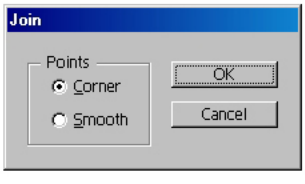
The lines are at a better thickness now, however, some of the lines have breaks in them that need to be fixed.

Deselect the intersecting line that causes the break by holding down Shift while clicking that pesky line with the White Arrow (A). Go to **Object>Path>Join** (ctrl+j), a window pops up asking if you want a corner or smooth, it doesn't really matter which one you pick so just hit OK.

Using the White Arrow (A) select a break in the line.



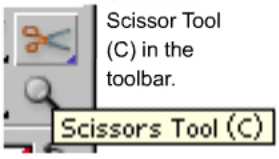




The break should now be fixed. The same steps should be performed on the rest of the hand where any other breakage occurs.

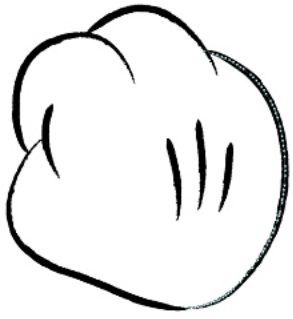
Illustrator Textured Lines Continued...

This is what the hand should look like once all of the breaks are joined. There are still a couple more steps that have to be performed to complete this clean up process. The line around the thumb gets really thin, to make it thicker, add a break in the line around the wrist area.

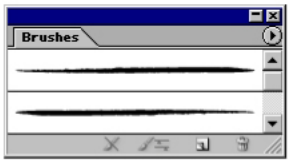


Select the Scissor Tool (C) in the toolbar.

Click the line at the wrist to break the line. Now the line has gotten a little thicker around the thumb, but it's not thick enough.

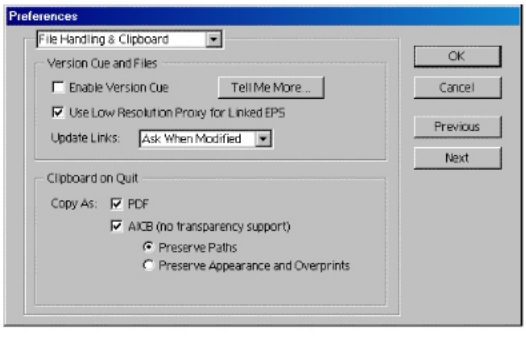


In the brush palette, it is good to have doubles of all of your favorite brushes. Each duplicate should be flipped in the opposite direction **(pg. 43)**. This will allow you to easily change the thickness of tapers at specific ends.

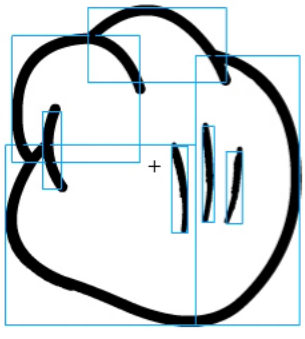


Select the line using the White Arrow (A) and select the brush directed the opposite way to flip the weight of the taper. Now we are done cleaning the hand with the pencil texture. Select the line art with the Black Arrow (V) and Copy it (ctrl+c).

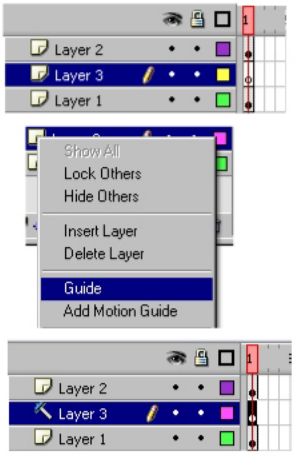
Remember to change the clipboard preferences in Illustrator before copying and pasting artwork back into Flash **(pg. 43)**. File>Preferences>File Handling & Clipboard, make sure that under Clipboard on Quit the settings are on Copy as PDF, AICB, and Preserve Paths.



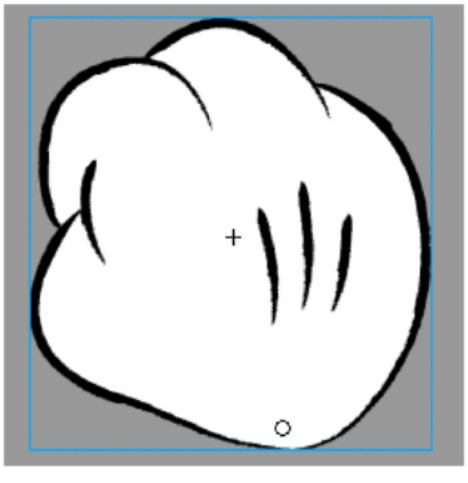
Back in Flash, inside of the hand symbol, make a new layer above the artwork, paste in the cleaned up line art, and register it to the artwork on the layer below. The cleaned up lines paste in as groups, you should probably Break them.



Select the original Flash line art, Cut it (ctrl+x), make a new layer between the two existing layers and Paste in Place (ctrl+shift+v) the Flash line. Now right-click on the layer icon and select Guide. This will turn the Flash line art layer into a guide layer, which allows artwork to exist on a layer but will not be visible outside of that symbol or when the file is rendered. I do this to be safe. If I ever need to make adjustments, I will still have my Flash line art as back-up. Again, I do these steps after the artwork is symbolized to keep my file clean, every asset should have three layers inside of its symbol when cleaned up using Adobe Illustrator.



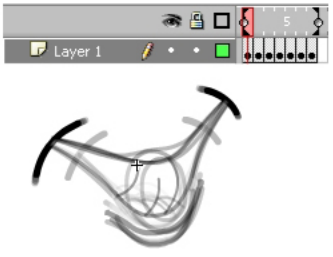
Exit the hand symbol and check it out, Pencil line textured clean up. How about that!



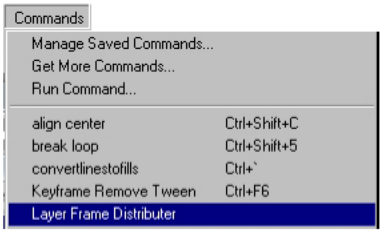
Illustrator Textured Sequence

Applying an Illustrator texture to a sequence, like a mouth chart or an eye chart can take a while. Working with multiple images, copying and pasting back and forth between Flash and Illustrator, and making sure everything is registered is extremely time consuming. Here is a way to speed up that process using most of the tricks previously noted.

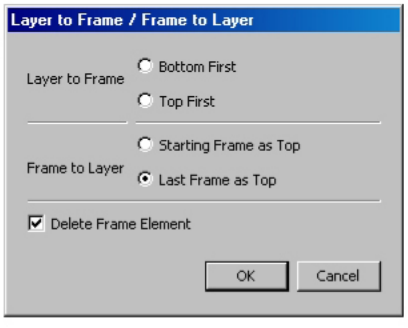
Here is our character's mouth chart. Every mouth is on a keyframe. The first thing to do is to put each keyframe on its own layer. To do this, cut (ctrl+x) the mouth, Insert a new layer, and paste in place (ctrl+shift+v).



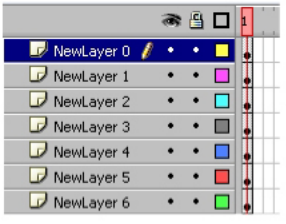
There are commands available for download online that will speed up this process of putting each keyframe on its own layer. The one I found and use is called **"Layer Frame Distributor"**. Look for it on Google and install it into your commands, it will save you hours!



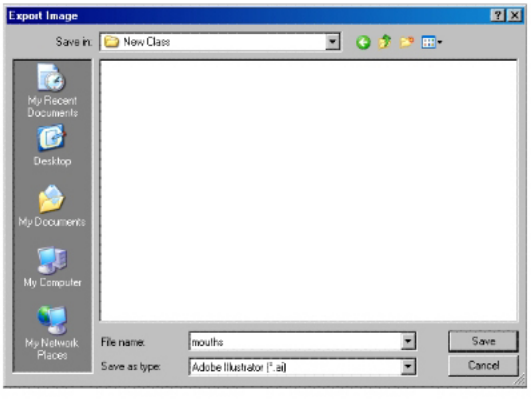
Using the **Layer Frame Distributor**, a window will pop up and ask how to sort the frames. For **Frame to Layer**, pick **Last Frame as Top**.



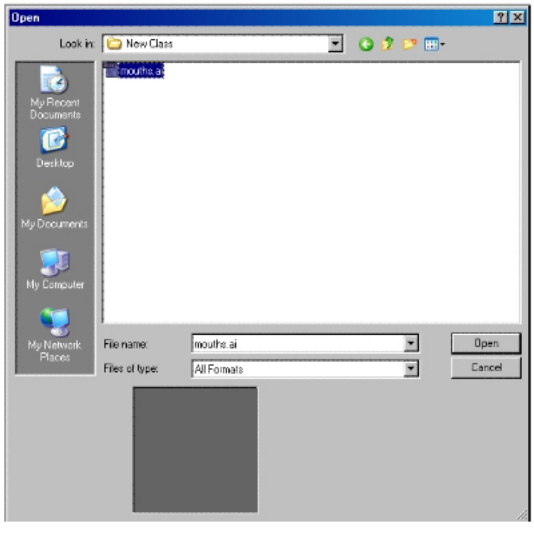
Now the mouths are distributed to their own layers.



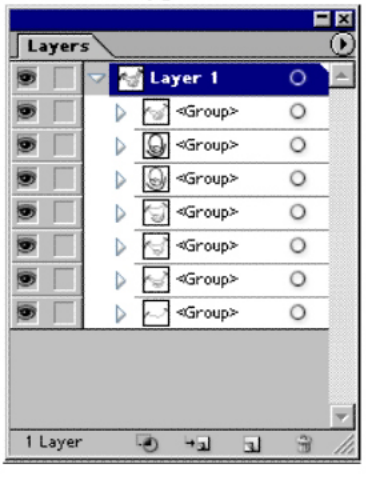
Export an Illustrator (.ai) image.
File>Export>Export Image



In Illustrator, Open the .ai file exported from Flash.

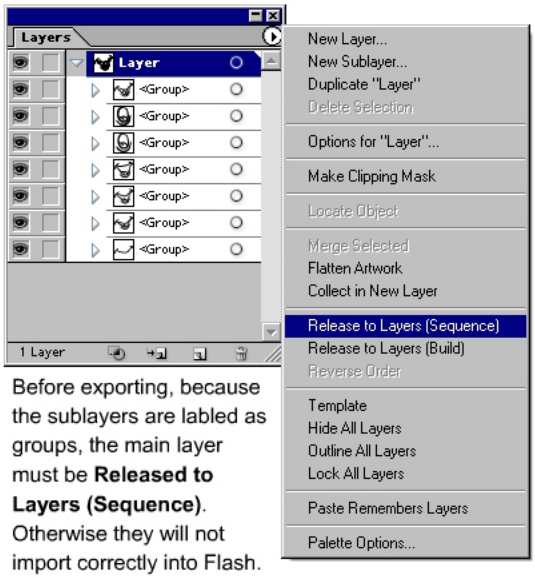


In the Layers Panel, notice that each mouth pose is on its own sublayer, much similar to how it was set up in Flash. Now with all of the mouth poses in Illutrator at once, apply the line textures using the brushes, refer to **pg. 63, 64**.



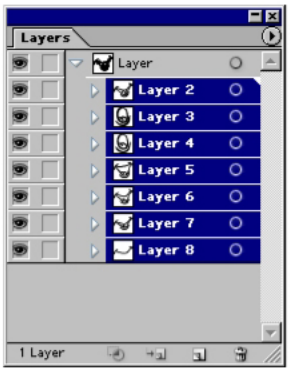
Illustrator Textured Sequence Continued...

After completing the Illustrator clean up, the mouths are about ready to export.

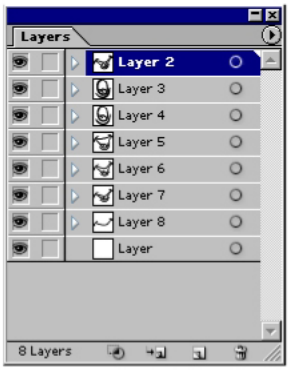


Before exporting, because the sublayers are labled as groups, the main layer must be **Released to Layers (Sequence)**. Otherwise they will not import correctly into Flash.

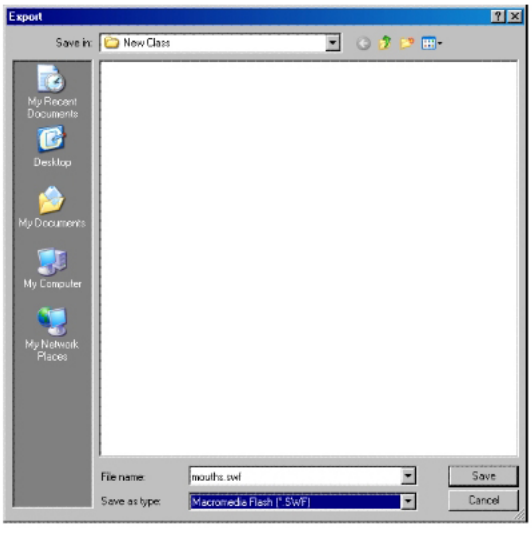
The sublayers should now be labled as layers. Select all of the sublayers and drag them above the main layer.



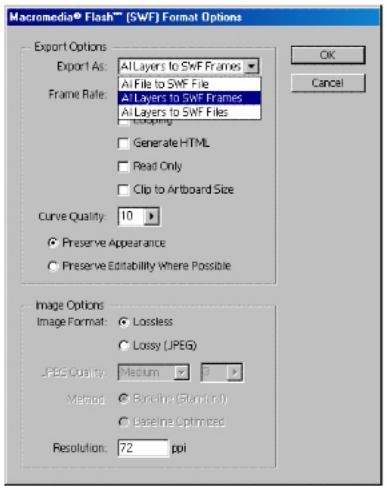
The sublayers are now regular layers and should import into Flash without any problems.



Export the Illustrator file as a **Macromedia Flash (.swf)** file.

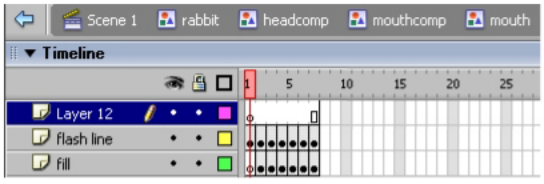


Make sure to **Export As, Al Layers to SWF Frames**. Click OK.

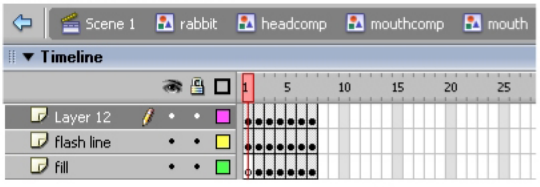


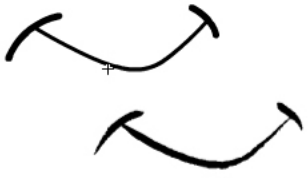
Illustrator Textured Sequence Continued...

In Flash, in the mouth symbol, insert a new layer above the layer that contains the flash line **(pg.64)**.

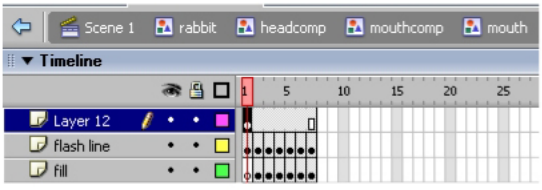


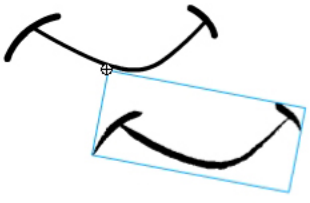
Import (ctrl+r) the swf file onto the new layer. Now all of the Illustrator textured mouths are imported inside the mouth symbol in sequence on their own layer, but are probably not registered.

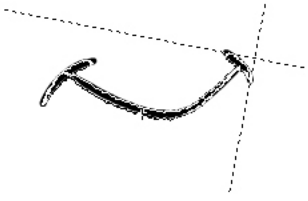




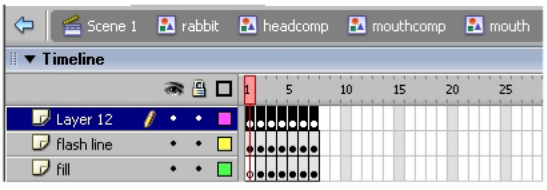
Flatten the Illustrator textured mouth sequence into a symbol by using **The Pringle (pg. 58, 59)**. This will make it easier to register the textured line to the Flash line.



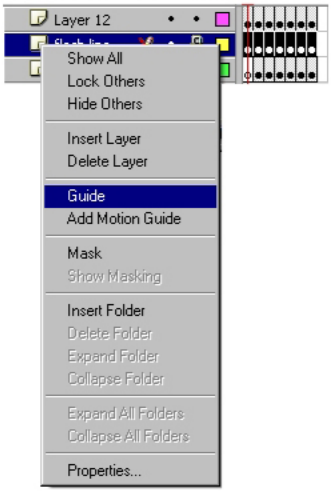




Once registered, convert the textured line layer to keyframes (F6) and then Break (ctrl+b) the Pringle symbol on each keyframe since we only needed the Pringle for registration purposes.



For the last step, right-click the flash line layer and change it to a **Guide (pg. 64)** so the flash lines don't show outside of the mouth symbol.



If you did it all right, your mouths should look something like these, and hopefully it didn't take you too long.