



The facial performance composer for character animations in Adobe Flash

User Manual

Version PUBLIC BETA 1.0

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Chapter 1 – The Basics

WHAT IS XPRESS?

Welcome to Xpress from Double Barrel Digital. Xpress is the first of its kind performance composer that focuses on expressions, glances and movements of the face. In technical terms, Xpress is a phonics-based, keyboard-controlled character animation tool for Adobe Flash. To put it more simply, Xpress is a Flash extension that will let you add incredibly accurate lip-syncing and facial expressions to your animations amazingly fast.

LIP SYNCING IN XPRESS

In Xpress, you will listen to the voice track of your animation and then, using the keyboard, type the appropriate letter to represent the sounds you hear. Xpress will translate those letters into the appropriate mouth shapes and facial features. All you have to do is scrub your way down the voice track, sounding out the words and selecting the letters that best represent the sounds you hear.

Before going any further, it's important to understand that **Xpress is not a transcription tool or an automated phoneme generator**. Its wizardry is based on *phonics*, or sounds. As you know, letters and sounds in our language are not always the same. For example, the word *phonic* may be spelled with a “**ph**” “**o**” and “**c**” but in Xpress you will type **f - a - n - i - k**. You do not spell, but rather *sound out* the words you hear to achieve the best possible lip-sync. Notice that this is very similar to the phonetic spelling you find in the dictionary: \ *fä-nik* \.

THE LONG AND THE SHORT OF IT

You probably remember sounding out words in elementary school when you first learned to read. Well, in Xpress you will be doing something very similar. Rather than typing a script, you will type out the sounds you hear.

When you hear the “m” sound in the voice track, you press the “m” key. Xpress will then insert the proper mouth graphic for your character's face at that place in the timeline. The process is relatively straightforward for all 21 consonants. There is one special case: the “th” sound in words like *though*, which has no single corresponding letter. To reproduce the “th” sound, simply hold down the Shift key while typing “t”.

Vowels are more sophisticated and require some extra consideration. Unlike consonants, each vowel in English has two separate and distinct sounds. These are called *long* and *short* vowel sounds. In Xpress, hold the Shift key while typing a vowel to specify a short sound. Here are some examples of long and short vowel variations and special keys:

	<u>LONG</u>		<u>SHORT</u> (hold the Shift key)
a	cape	Shift + a	cap
e	bee	Shift + e	bet
i	bite	Shift + i	bit
o	no	Shift + o	not
u	you	Shift + u	up
t	toe	Shift + t	though

To close the character's mouth, type the dash '-' key.

Notice the shape of your mouth when you say the example words above. Also, listen for the distinct phonic differences between the long and short sounds of these vowels. This is what you should listen for when sounding out words.

Because it is phonics-based, Xpress can work in virtually any language. The examples in this manual are based on the English alphabet, but the phonics are universal and can be adapted to the language of your choice.

WHAT'S NEXT?

The **Lip-Syncing Tutorial** in the next section will teach you how to add quick and accurate lip-syncing to the Xpress demo character. Once you've learned the basics, you will be able to animate a "talking head" of your own design. The **Creating your Own Character Tutorial** that follows will walk you through the process of drawing or pasting in your artwork into the Xpress templates. When you're finished, you will run the **Xpress – Creation Machine** command, which converts your artwork into source symbols that can be used in any Flash animation. The **Advanced Techniques** section will show you how to do even more with Xpress, including adding emotions, glances and positions to facial features, as well as importing artwork directly into the Xpress creation machine.

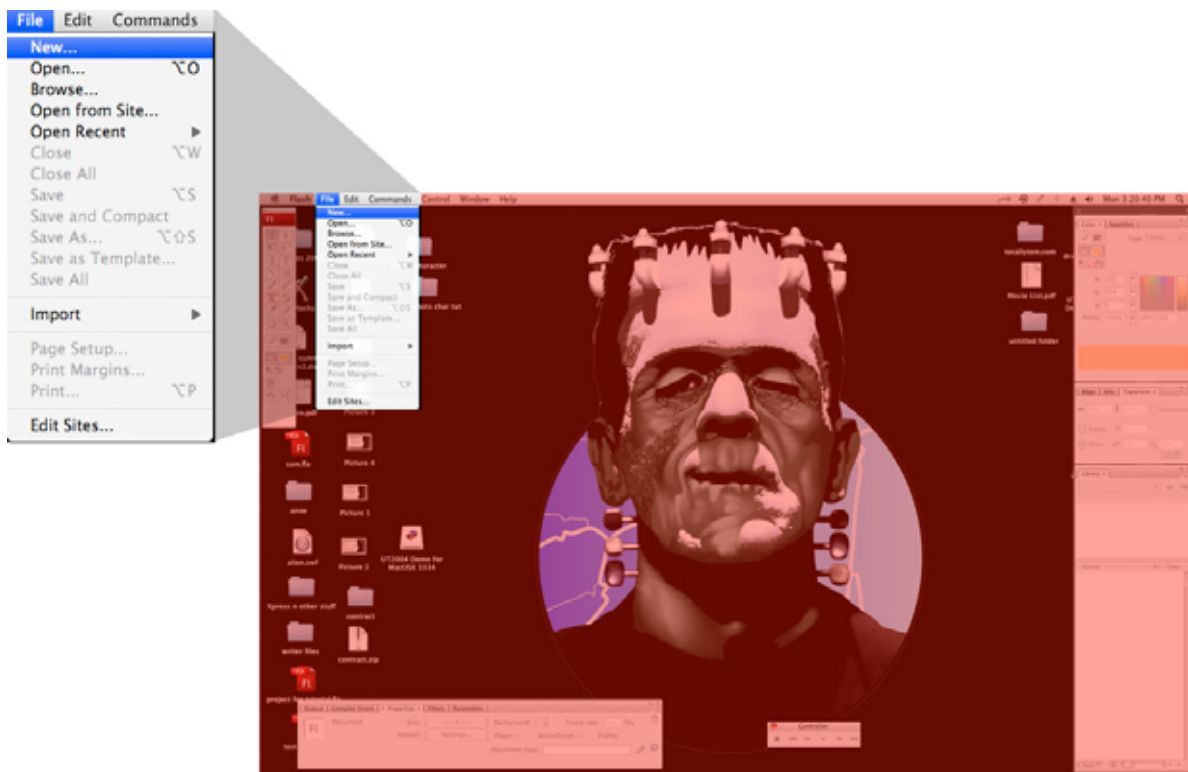
Chapter 2 – Your First Words

Now that you understand the logic of Xpress, you're ready to see it in action. Xpress includes a **Demo Character** command that allows you to try your hand at lip-syncing in Flash right away. Make sure that you have completed the Xpress installation instructions and then follow along with this tutorial.

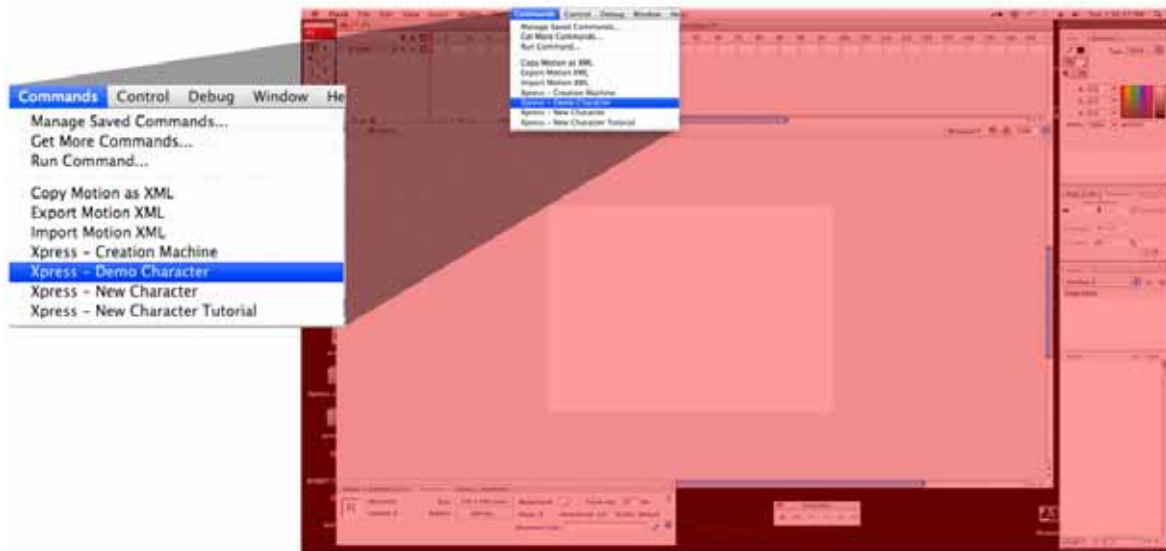
Lip-Syncing Tutorial

MAKE HIM TALK

STEP 1: Create a new document (Flash File Actionscript 3.0).

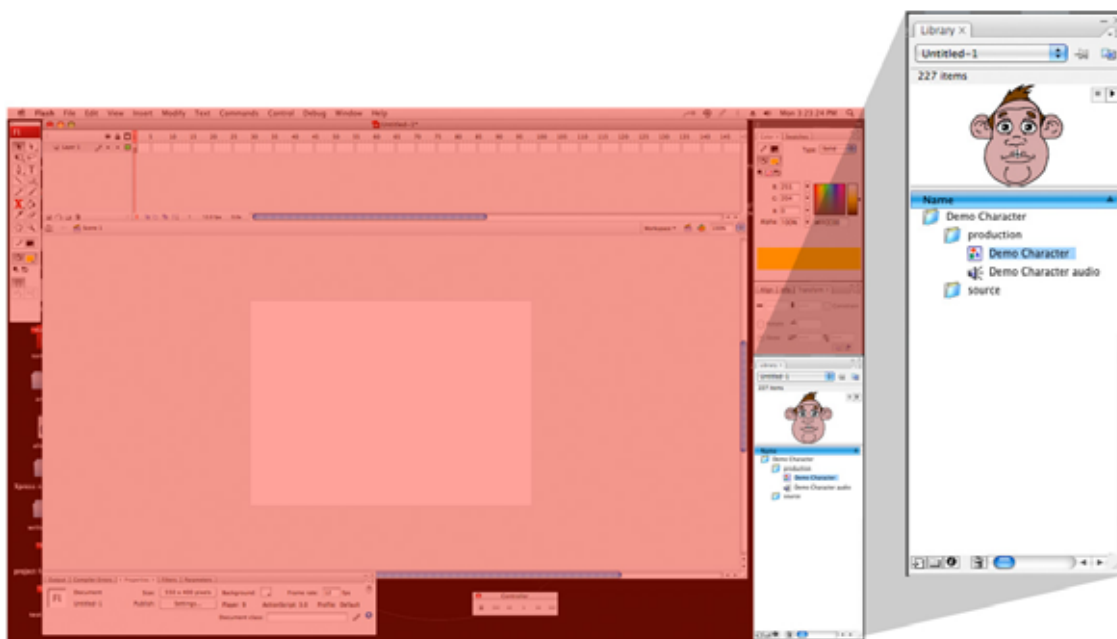


STEP 2: Choose the menu item **Commands > Xpress – Demo Character**. This will create all the necessary assets for your animation in the Library window, including sample graphics and sound.

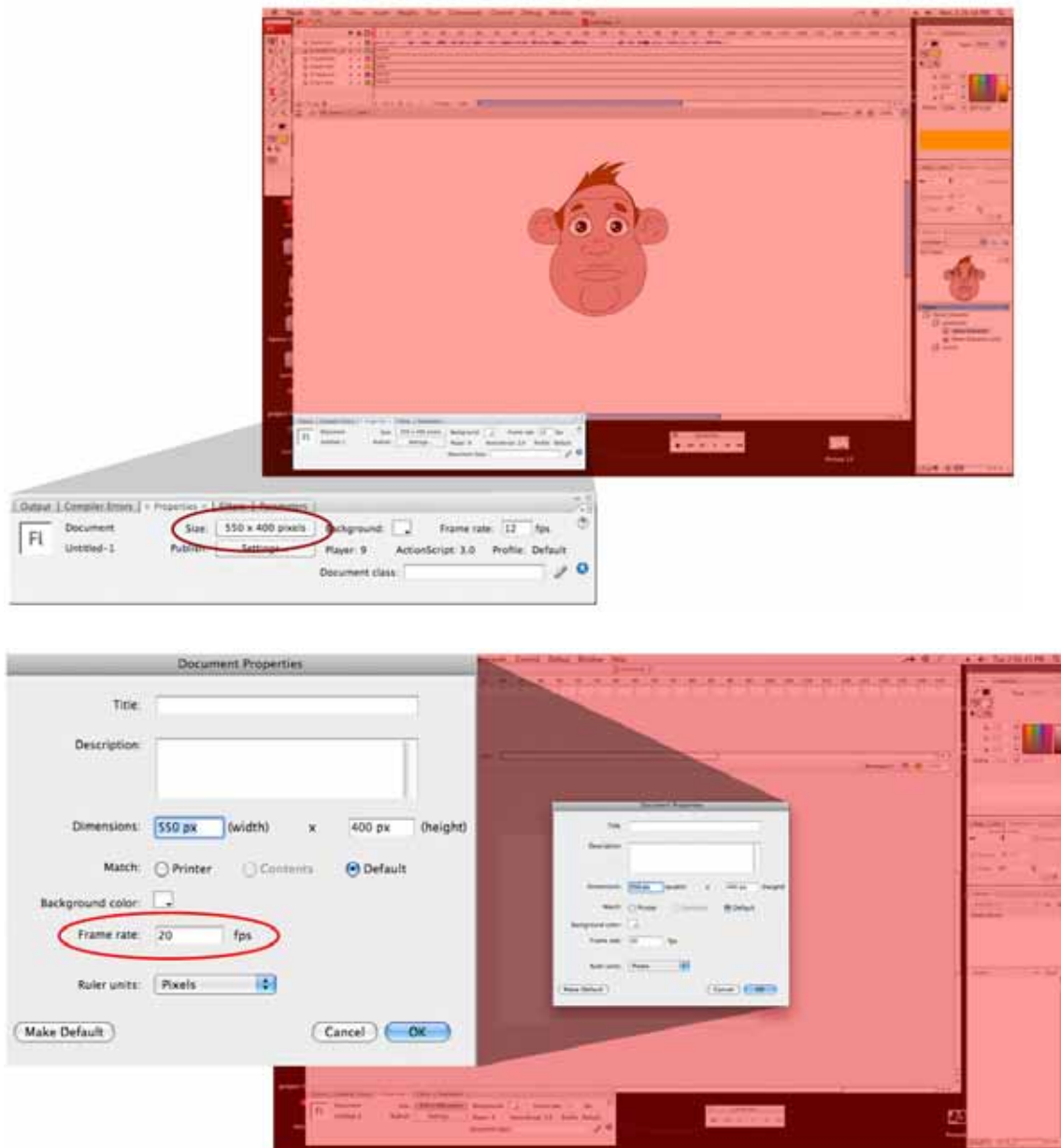


IMPORTANT: If you are using a PC, be sure to run the **Register.exe** program and enter the serial number you received in your welcome email before using Xpress. Mac users will be asked to enter the serial number the first time they run an Xpress command.

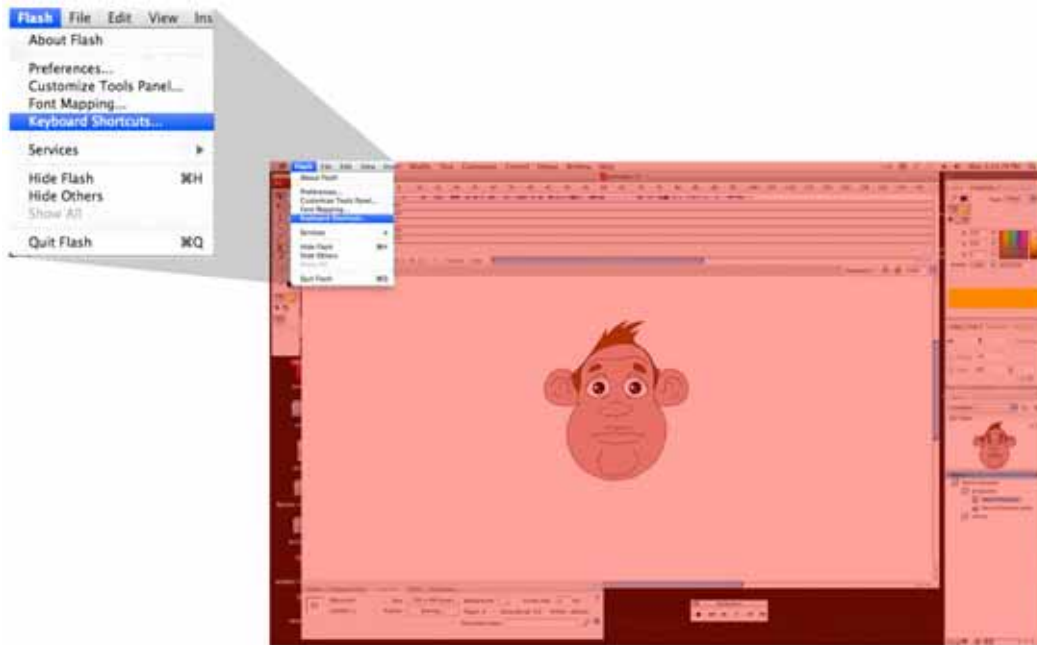
STEP 3: Double-click on the graphic file with your character's name to open it up in editing mode. In this case, the character is simply called "Demo Character." The file is located in the **production** folder in the Library window.



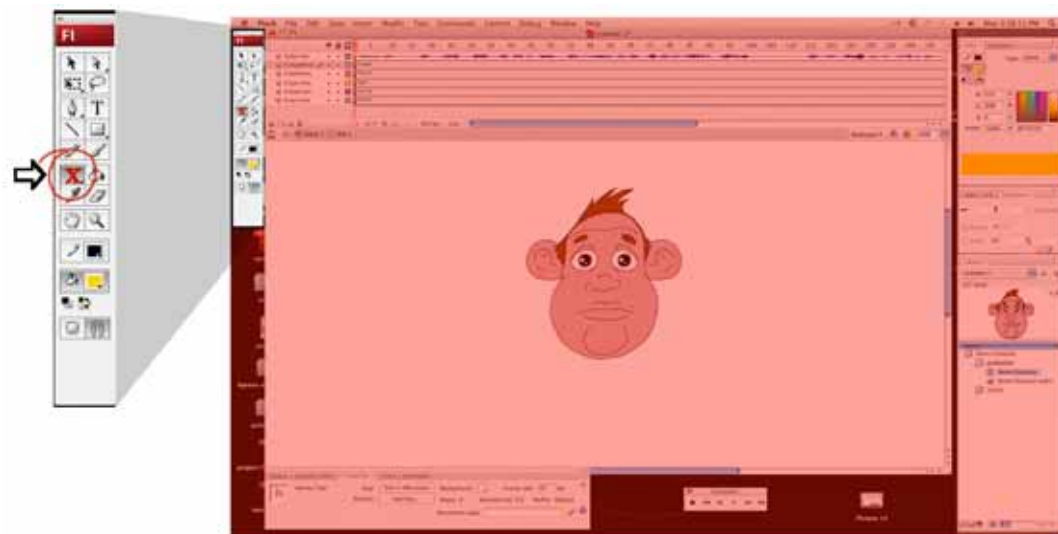
STEP 4: From the Properties window, click on the *Size* button to bring up the Document Properties dialog. We recommend changing the *Frame rate* to **20 fps**. The higher the frame rate, the more breathing room you will have to control your character's mouth movements.



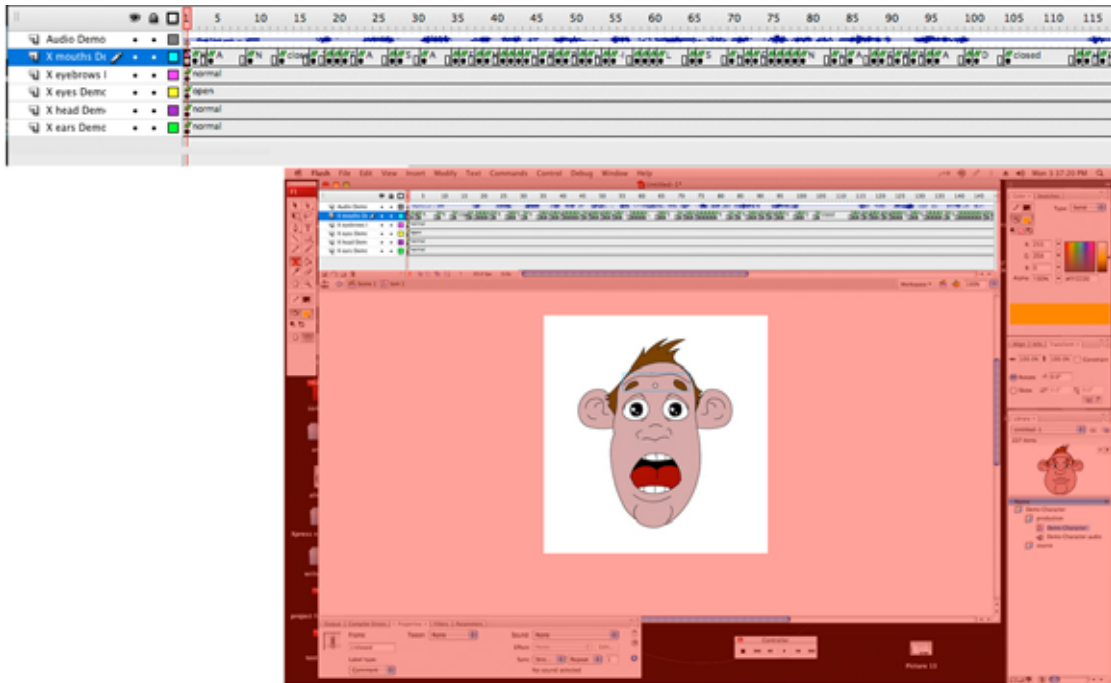
STEP 5: One last thing: Before using the Xpress Tool, you will need to change your keyboard settings by selecting the menu item **Edit > Keyboard Shortcuts...** (On a Mac: **Flash > Keyboard Shortcuts...**). Change the *Current* set to **Xpress**. (Always remember to reset your keyboard settings back to their default when you are done using the Xpress Tool.)



STEP 6: Now you're ready to start animating. Select the red "X" in the toolbar denoting the Xpress Tool.



STEP 7: Select the **X mouths** layer in the timeline to begin adding lip-syncing.



STEP 8: Select the menu item **Control > Play** to hear the soundtrack a couple of times. Now that you know what your character is saying, simply drag the playhead along the timeline. At each sound, type the letter that corresponds to the *phoneme* you hear. Take a look at this example:

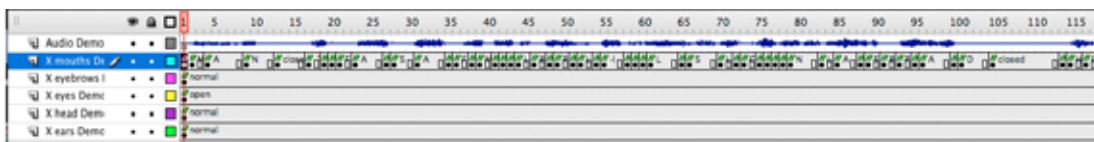
Man	this	Fast	Talk	from	Double	Barrel	Digital	is	slicker	than	sliced	bread.
m-a-n	-t-i-s	f-a-s-t	t-o-k	f-r-u-m	d-u-b-l	b-a-r-i-l	d-i-j-i-t-u-l	-i-z	s-l-i-k-i-r	-t-a-n	s-l-i-s-t	b-r-e-d

Generally speaking, consonants are easy. You hear an '**m**' sound and you type '**m**'. Vowels require a bit more thought because there are *long* sounds and *short* sounds. To specify a short sound, hold the **Shift** key while typing the vowel. On your timeline, as in our example, this is indicated with a dash '-'. The same logic works for special consonants, like the '**th**' sound in '**the**'. Remember, you are typing the letters that correspond to the *sounds* you hear —not necessarily how the *wird iz speld!*

ADDING FACIAL GLANCES AND EMOTIONS

By now you've managed to animate the mouth movements of a demo character to go along with a soundtrack. This is a talking head that you can drag along with the audio track onto the main stage of any scene you wish, and manipulate it with your own appropriate (or inappropriate) body graphics.

This is not all Xpress can do, though. Besides adding accurate lip-syncing animation to your characters, Xpress also lets you add facial and emotional expressions just as easily. Take a look at the Timeline window again and you'll notice several more Xpress layers, each beginning with **X**:



Adding emotions to the character is just as easy as typing. First make sure you have selected the Xpress tool from the toolbar, then select the **X head** layer and click on any point in the timeline. Then type the letter that corresponds to the emotion you want the character to convey. For example, make the demo character angry by typing 'a' in the **head** layer.

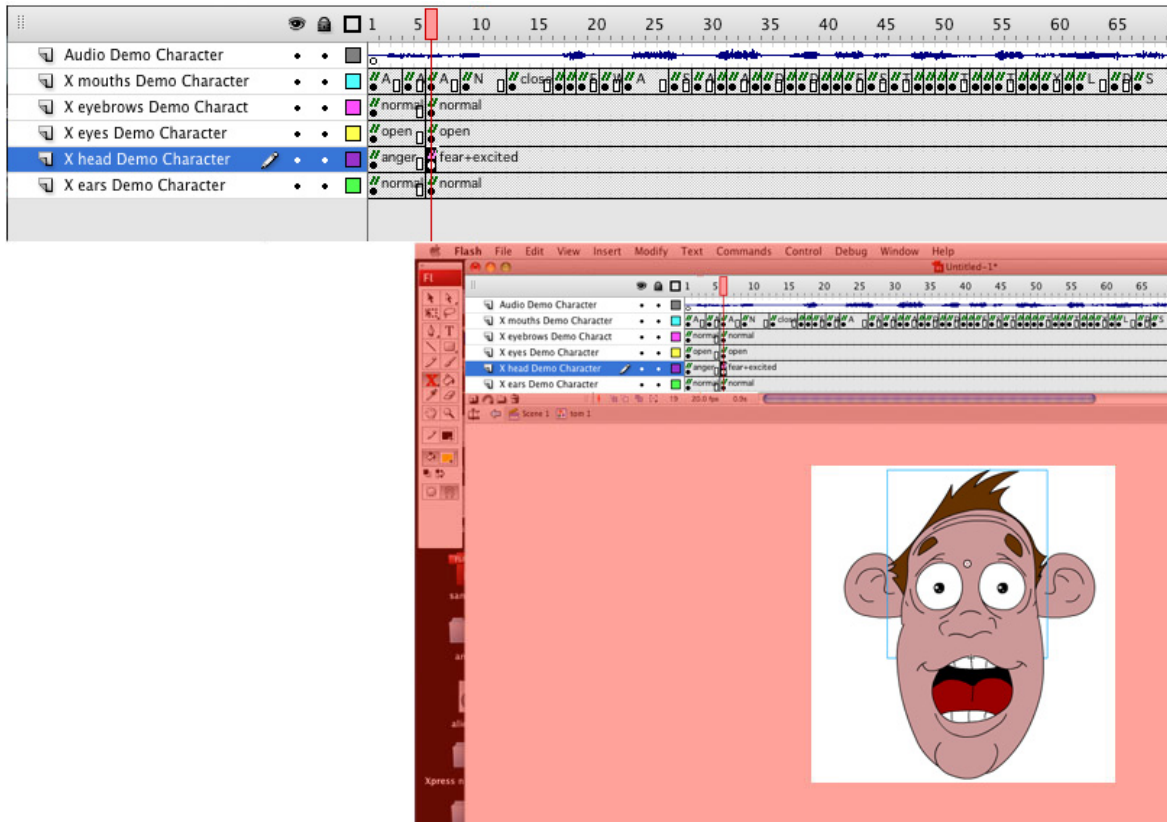


X head layer keys —

x	X-Normal
a	Anger
b	Bored
e	Excited
f	Fear
h	Happy
r	Resolute
s	Sad

Watch as the character changes his entire facial expression with just a keystroke!

The **X head** layer acts as a “master layer” that changes all layers to the appropriate emotion and expression at once. However, Xpress allows you to enter not just one emotion, but two. For example, type ‘f’ in the **head** layer to make your character fearful. Then, type ‘e’ (excited) as a secondary emotion and watch as the mouth elements reflect excited while the eyes still reflect fear. The first keystroke is your primary emotion, which affects the entire face unless a secondary emotion is also entered.

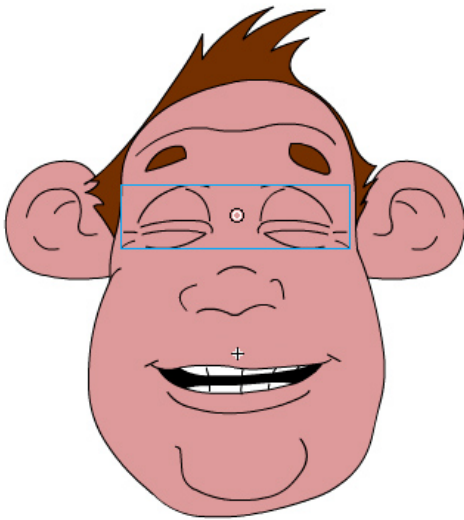


Primary and secondary emotions, indicated with the ‘+’ symbol in the timeline, allow for a much more sophisticated emotional range. When you apply an emotion, the rest of the timeline moving forward will be updated.

REFINING EMOTIONS FOR EACH FACE PART

Each layer in the Timeline window — **X mouths** - **X eyebrows** - **X eyes** - **X head** - **X ears** — can also be manipulated individually. This allows you to refine an extremely accurate range of facial expressions and emotions for your character. To move frame by frame in the timeline, press the spacebar. To move the time marker back and forth, toggle the < > keys (comma and period on the keyboard).

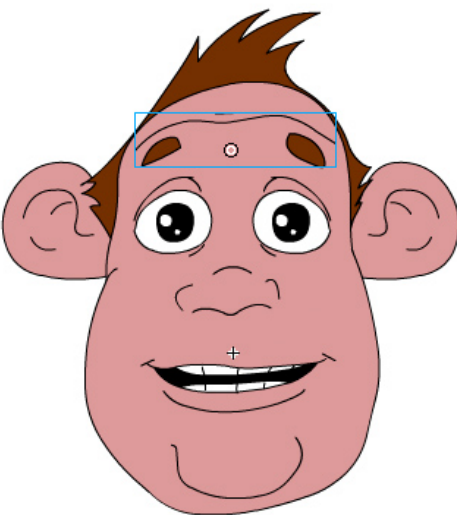
To work with an individual face part, simply select the layer you wish to manipulate and start typing. (Make sure you have selected the Xpress tool from the toolbar.) In the **eyes** layer, type 'c' to close his eyes, and 'o' to open them up again. Look left, right, up, and down by typing 'l' 'r' 'u' or 'd' respectively.



X eyes layer keys —

c	Closed
Shift + c	Closed Tight
o	Open
u	Look Up
d	Look Down
l	Look Left
r	Look Right
Shift + l	Wink Left
Shift + r	Wink Right

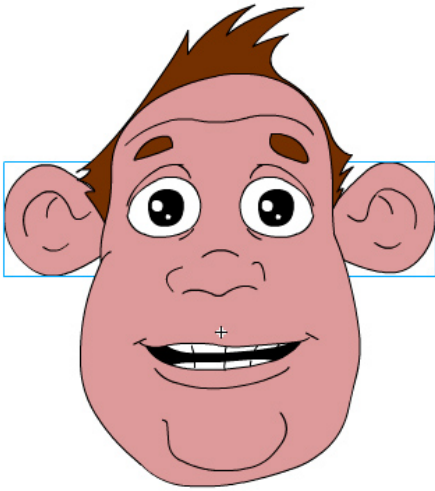
You can also raise the eyebrows...



X eyebrows layer keys —

n	Normal
u	Up
d	Down

Or wiggle the ears...



X ears layer keys —

n	Normal
u	Up
d	Down

After you have played around sufficiently with the demo character, you will probably want to work on your own characters. You can create your own animations by importing your graphic assets (heads, mouths, eyes, audio, etc.) over the corresponding layers in the **Xpress – New Character** template, running the creation machine, and adding your own audio track. This is the subject of the next tutorial.

Chapter 3 – Your Own Characters

With Xpress, you can quickly go from the drawing board to a complete animation in no time at all. Many productions start off by creating an animated storyboard, also known as an animatic. This section will show you how to integrate Xpress into your own production environment, from art to audio to animation. You will also learn how to update and synchronize your final productions.

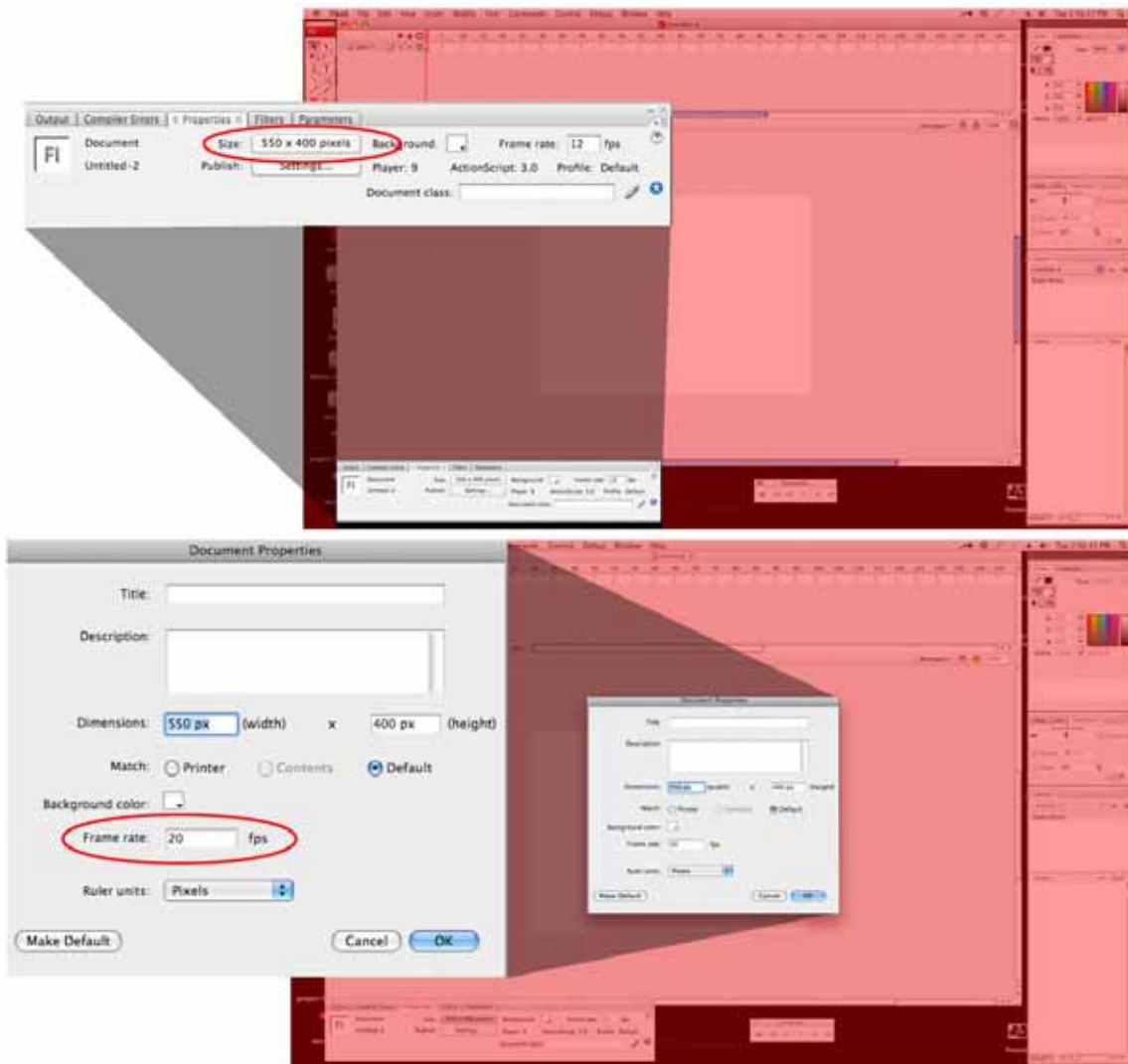
From Start to Finish Tutorial

PART 1: DRAWING YOUR CHARACTER

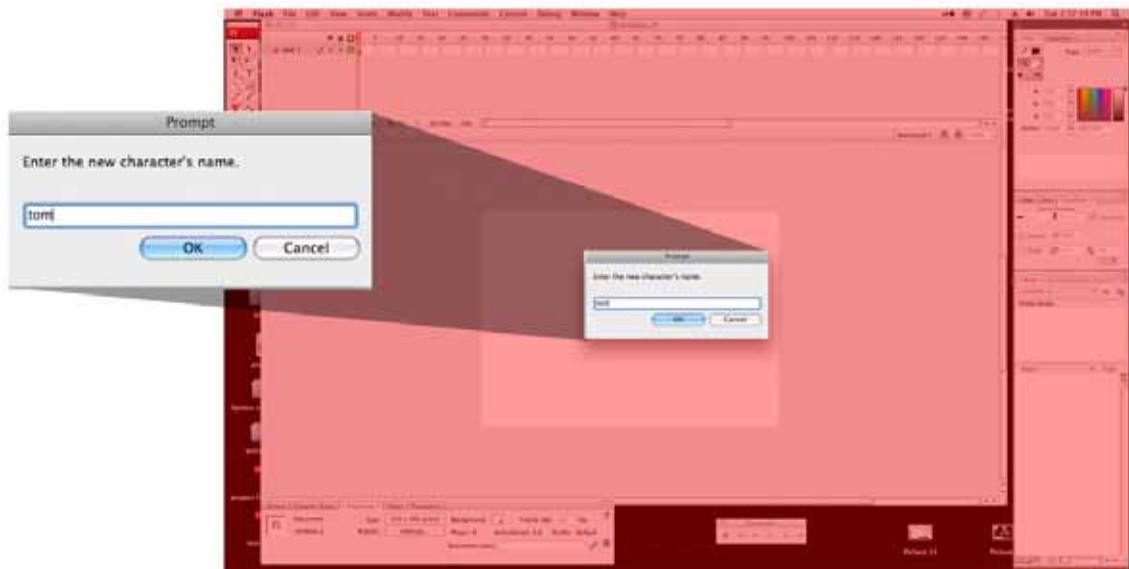
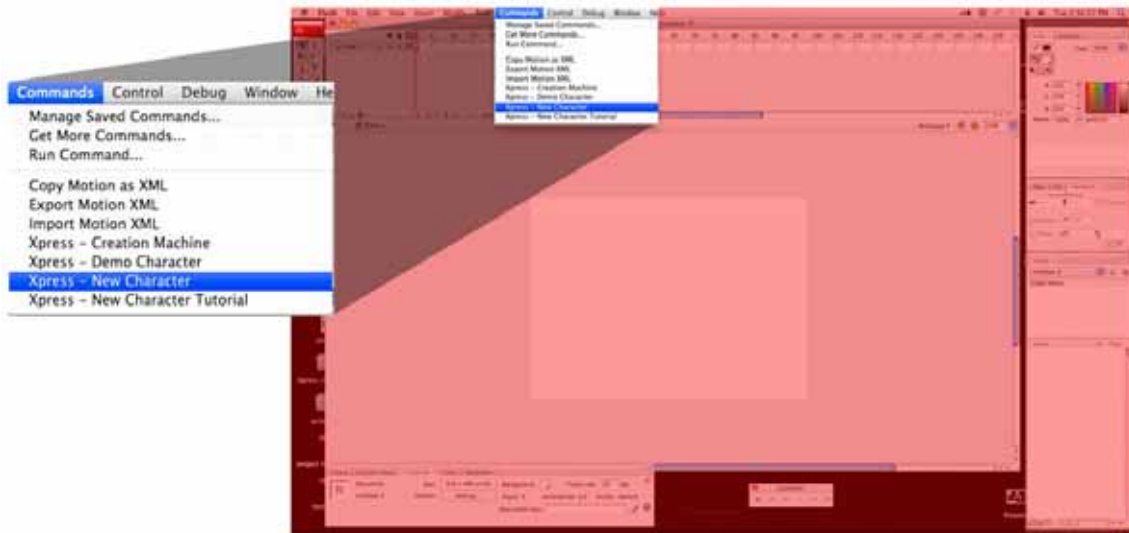
STEP 1: Select **File > New...** to create a new document (Flash File ActionScript 3.0).



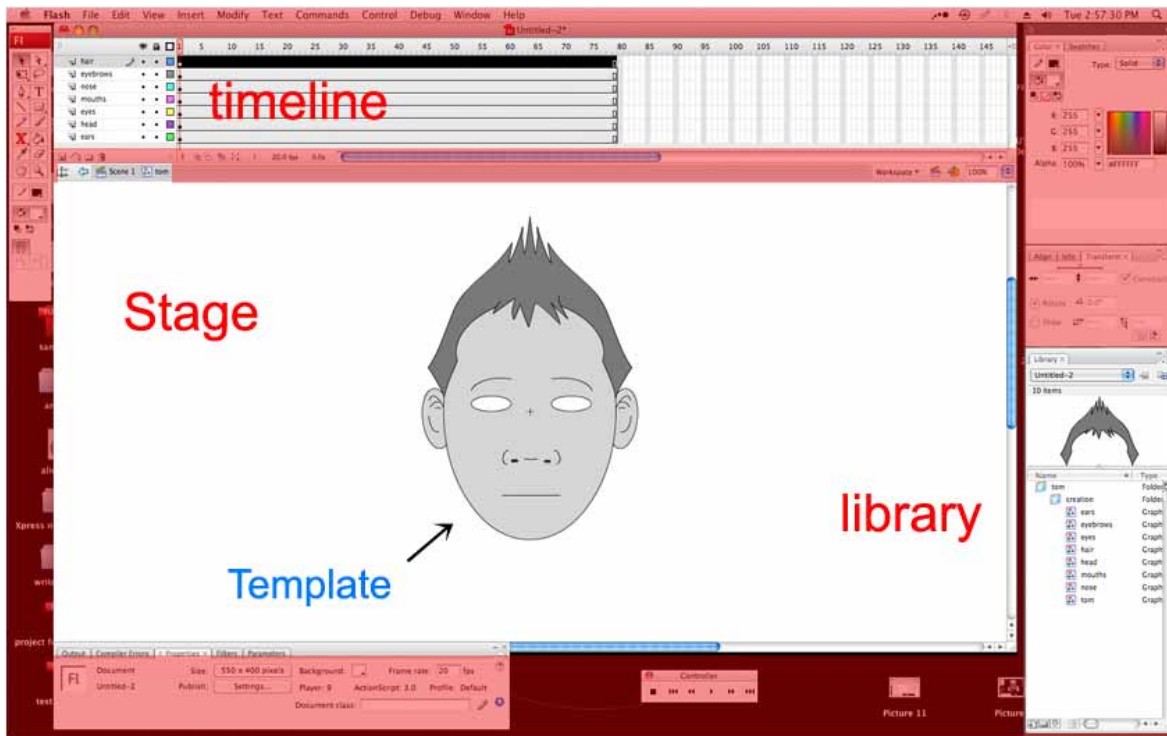
STEP 2: A new project stage and timeline opens up. In the Properties window, you can increase the size and the frame rate of the stage. Click on the *Size* button to bring up the Document Properties dialog and change the *Frame rate*. A frame rate of 20 fps is recommended for Web animation, and 30 fps for broadcast. The higher the frame rate, the more breathing room you will have to control your character's movements.



STEP 3: Choose the menu item **Commands > Xpress – New Character** and enter a name for your new character when prompted. This will create all the necessary graphic symbols for your animation in the Library window. *(Alternatively, you may select “Commands > Xpress – New Character Tutorial”, which provides the same graphic symbols, but with an added layout template to help guide you.)*



After a few seconds, the stage will open in editing mode and you will see the default Xpress head.



Take a moment to look over a few key pieces:

- Each part of the face is a layer stacked up in the timeline: hair, eyebrows, nose, mouths, eyes, head and ears.
- Each Xpress template symbol contains default **reference** layers to help you create your own character's head. (You will delete these layers after drawing your own art.)
- In the Library window you'll notice a folder with your character's name. Inside it is the **creation** folder, which contains *graphic symbols* for each part of the face, as well as a symbol with your character's name — this is the master graphic symbol you are viewing on the stage, with all the facial features that make up your character.

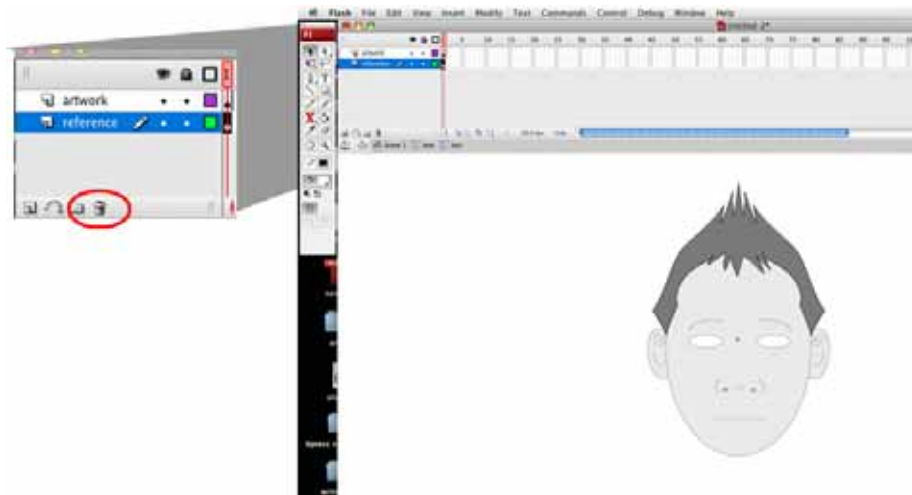
Tip: A *symbol* is a reusable object used in Flash — in this case, a graphic of the hair, ear or other part of the face. Symbols are stored in the Library, and you can drag and drop them into all your animations. When you edit a graphic symbol, each place that utilizes the graphic symbol is updated at the same time.

STEP 4: Draw or import a sketch of your custom Xpress character using the new character templates.

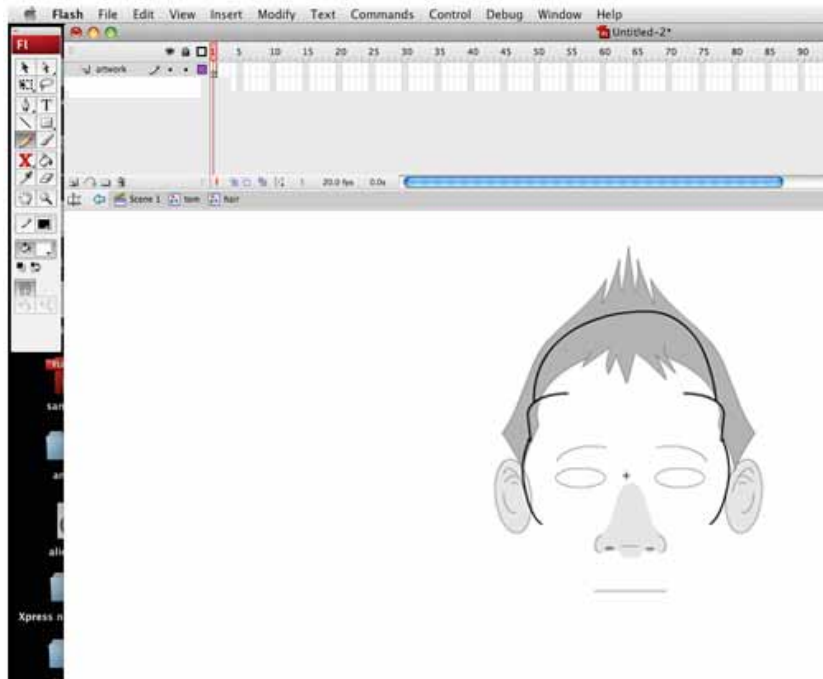
- a. Choose the Selection Tool from the Flash toolbar and double-click on the character's head to open the head graphic symbol in editing mode.



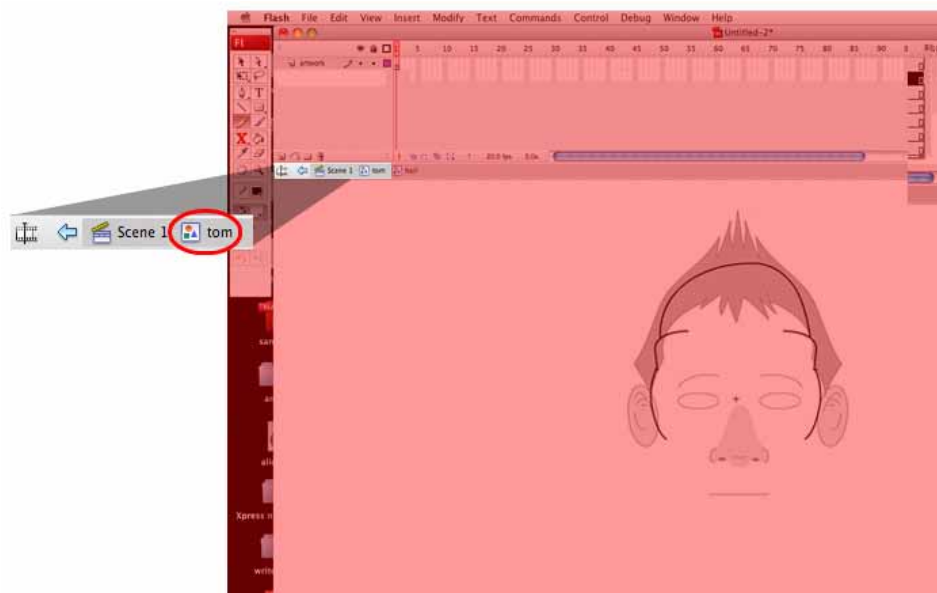
- b. Select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.



- c. Select the Pencil tool from the toolbar and draw the artwork for your character's head on frame 1 of the **artwork** layer. Alternatively, select the menu item **File > Import > Import to Stage...** to import your drawing.



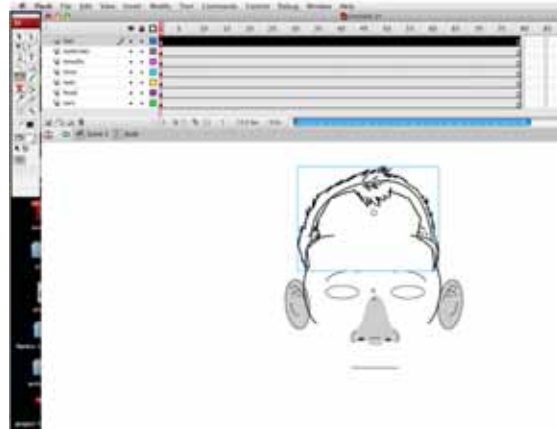
- d. Return to the main character symbol by selecting it from the stage list. (Remember, the master graphic symbol shares your character's name.)



Repeat steps 4a–4d with the **hair**, **nose**, **ears**, **eyes**, and **eyebrows**. Remember to always draw your sketch on the first keyframe so that it will extend the artwork through all

emotional states. If you find it helpful, feel free to add additional layers of artwork for any face part, but do *not* delete the **emotion labels** and **position labels** layers. In the Advanced section of this guide, you will see how these layers work to give your characters even more movement and expression.

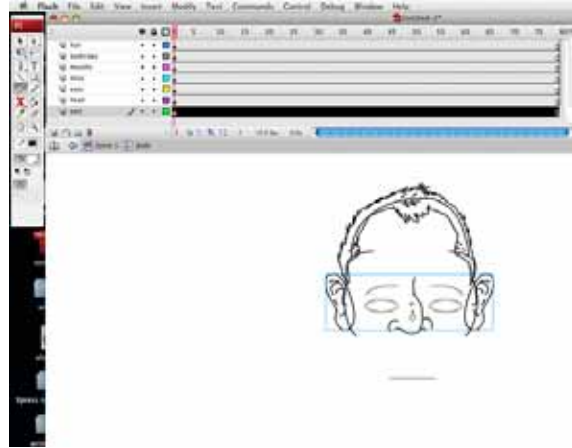
hair



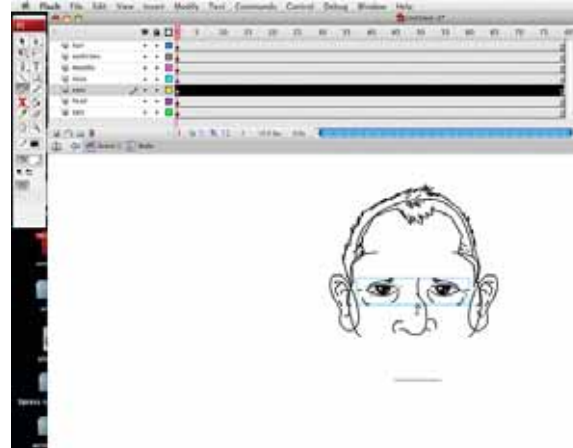
nose



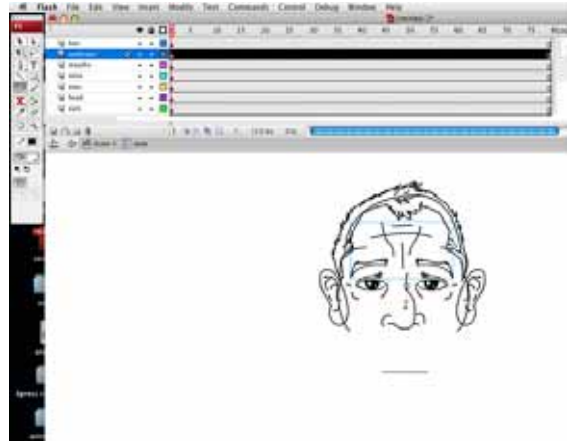
ears



eyes



eyebrows

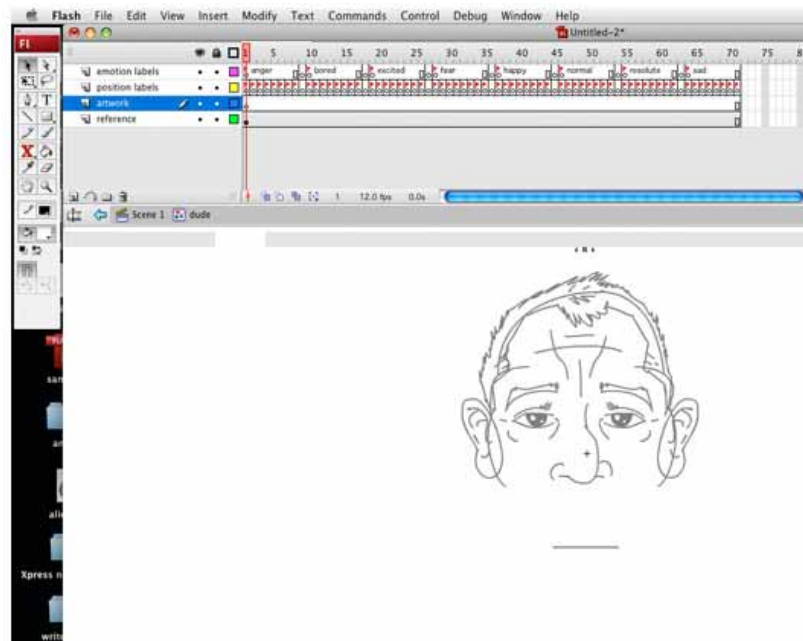


STEP 5: The last facial feature of your character to draw is the **mouths** layer. The mouth has a range of seven positions, each of which corresponds to letter sounds of the alphabet. The *mouth8* position corresponds to a closed mouth.

frame	1	2	3	4	5	6	7	8	9
emotion labels	anger								
position labels	mouth8	mouth1	mouth2	mouth3	mouth4	mouth5	mouth6	mouth7	
Corresponding letter	<i>closed</i>	A – I H	B – M P	C – D G – J K – R CH – S T – N X – Z Q – SH	E	F – V	L – TH	O – U W – Y	

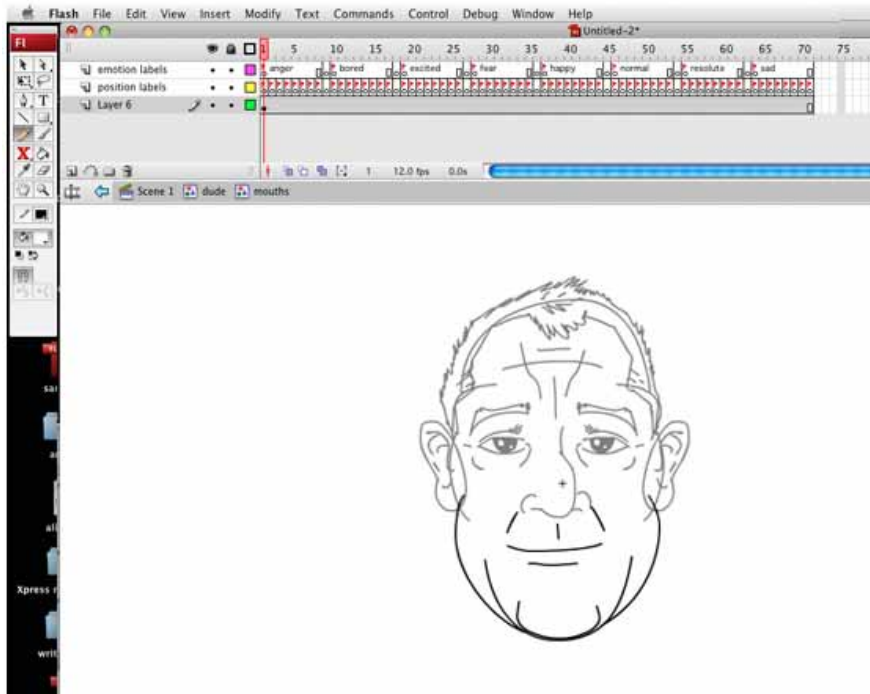
Note: There are 26 letters in the English alphabet, but when we pronounce these sounds, many have the same mouth shape. For instance, notice the shape of your mouth while pronouncing the letter “f” or the letter “v” and you will see that the mouth position is identical. This is why Xpress uses seven mouth positions in addition to the closed mouth.

- Choose the Selection Tool from the Flash toolbar and double-click on the character’s mouth to open the mouths graphic symbol in editing mode.



- Select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.

- c. Select the Pencil tool from the toolbar and draw the *closed* mouth position on frame 1 of the **artwork** layer just as you did in step 4b for the head, nose, ears, eyes, and eyebrows. Alternatively, select the menu item **File > Import > Import to Stage...** to import your drawings.



- d. Now, select frames 47–53 of the **artwork** layer, corresponding to the remaining *mouth1–mouth7* positions of the *normal* emotion. Create a series of seven blank keyframes by selecting the menu item **Modify > Timeline > Convert to Blank Keyframes** (or press **F7**).

- e. Select the Pencil tool again and draw a rough sketch of the remaining seven mouth positions in **artwork** layer. Alternatively, select the menu item **File > Import > Import to Stage...** to import your drawings. Note that you may insert as many additional layers of artwork as you like, as long as you repeat the process of creating keyframes for each new layer.

Mouth8 – Closed Mouth



Mouth 1 – A



Mouth 2 – B



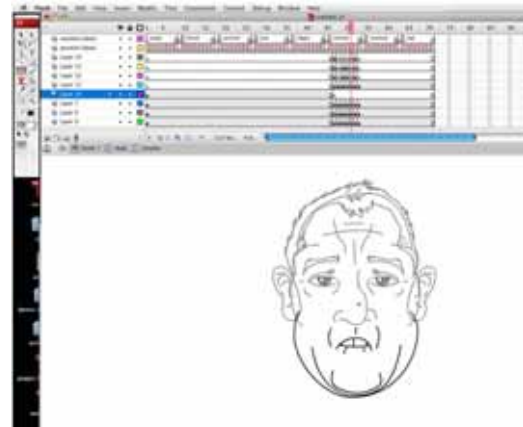
Mouth 3 – C



Mouth 4 – E



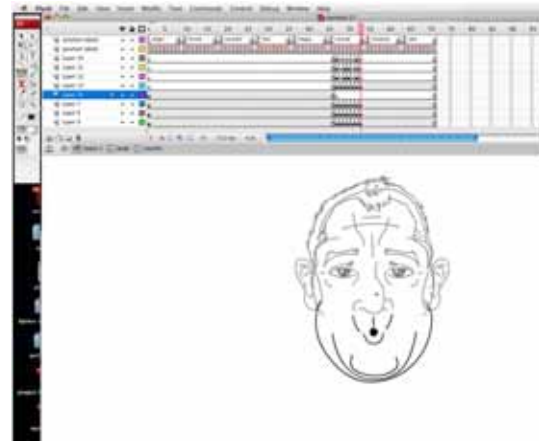
Mouth 5 – F



Mouth 6 – L



Mouth 7 - O



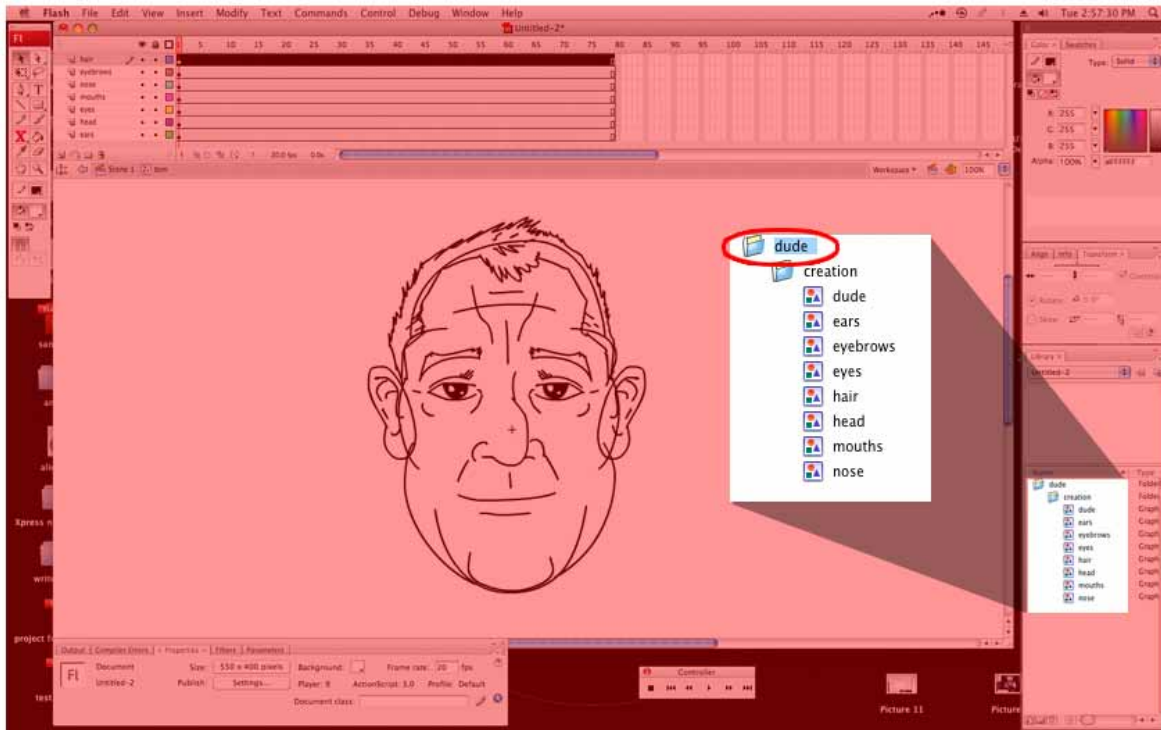
- f. Return to the main character symbol by selecting it from the stage list (remember, the master graphic symbol shares your character's name).

Now that you have completed the initial artwork for your talking head, you can move on to the creation machine.

PART 2: THE CREATION MACHINE

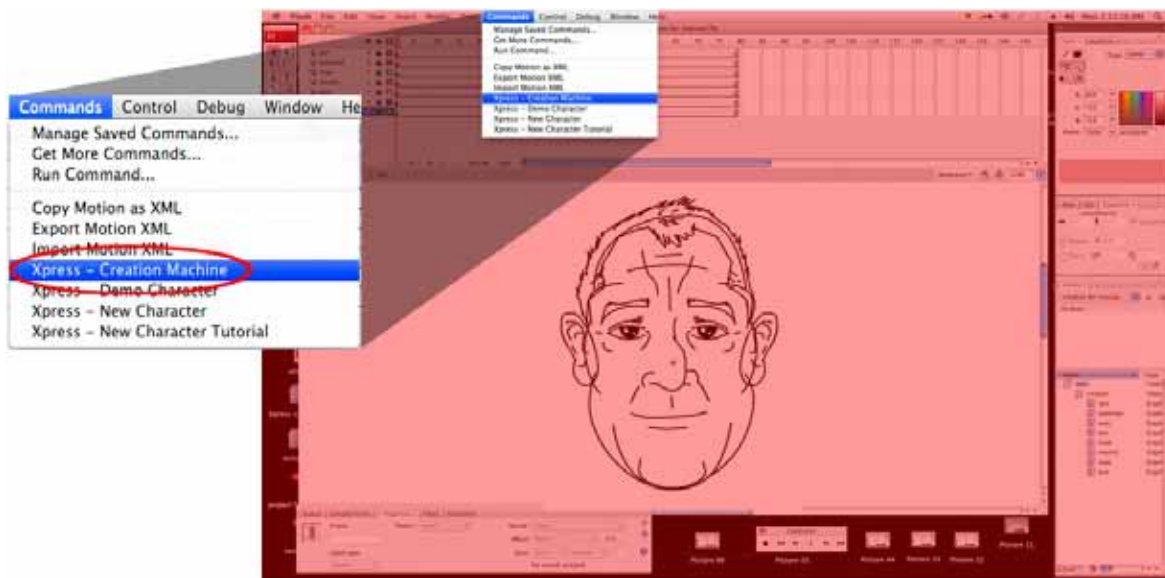
The “creation machine” automates the task of creating and managing all the source symbols. It will automatically convert the artwork you have drawn in the **Xpress – New Character** template into the necessary source symbols. This is accomplished easily using the **Xpress – Creation Machine** command.

STEP 1: Select the root folder corresponding to your character’s name in the Library.



STEP 2: Choose the menu item **Xpress – Creation Machine** from the **Commands** menu. Running this command will convert all of the character’s graphic assets into source symbols in the **source** folder. It will also create the **production** folder, along with an example animation file you can use to begin animating.

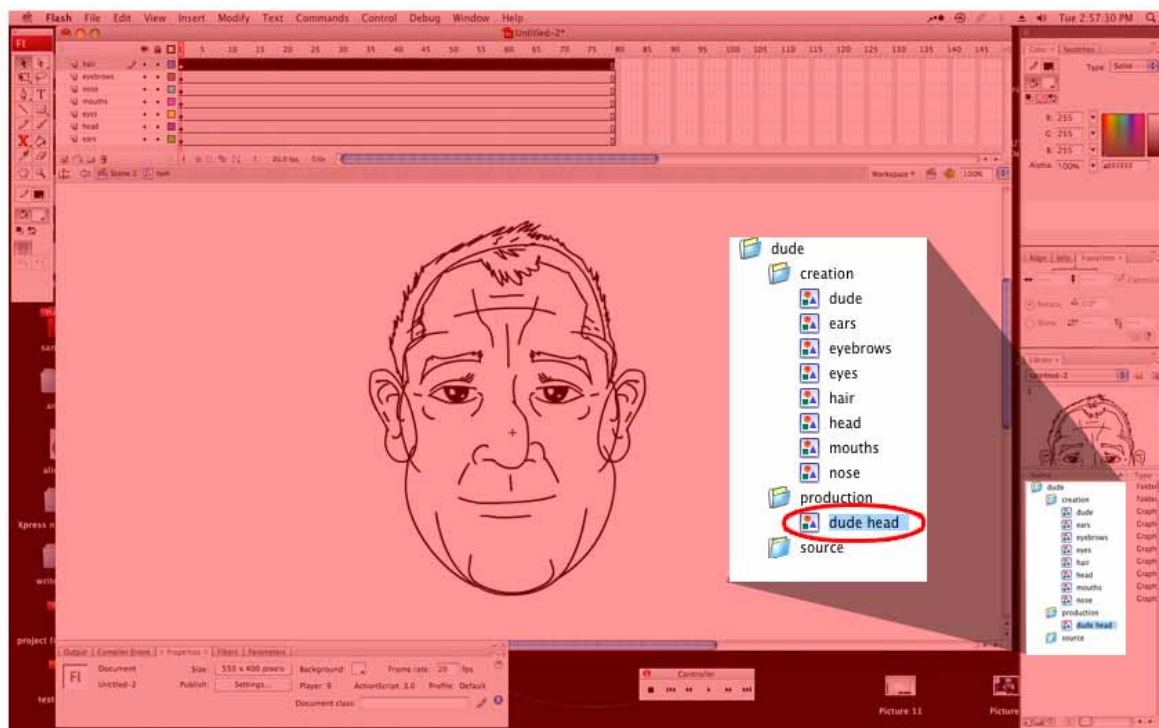
Keep in mind that the creation machine will take advantage of all the artwork you have drawn or pasted so far; it simply skips over any parts you have not yet had time to do. This means you can add or refine your artwork in the **creation** folder as many times as you like. Each time you want to update your animation, simply select the graphic symbol you want to update, and run the creation machine again. All the necessary files will be updated automatically.



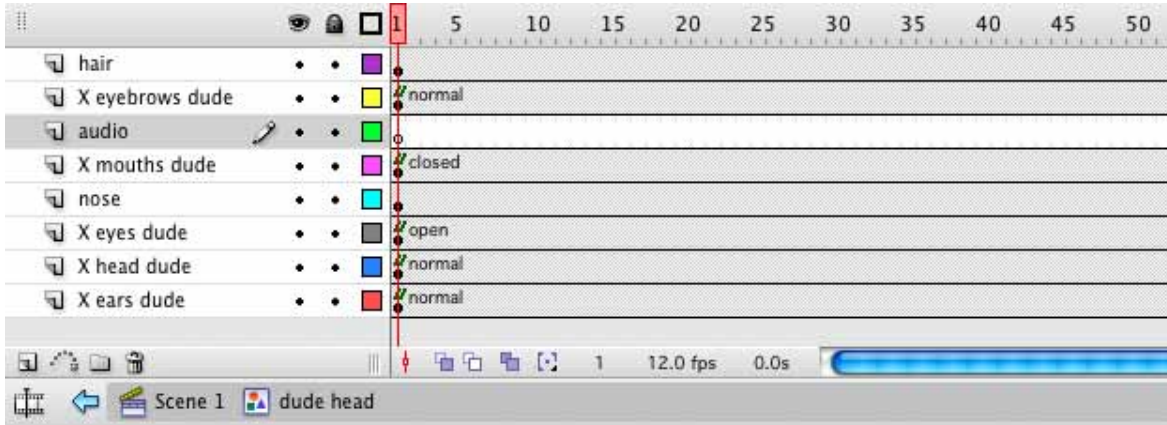
Note: Depending on your computer's processor speed, it can take up to 10 minutes for the creation machine to complete the conversion of a complex character with all facial elements and all emotions included.

PART 3: ADDING AUDIO

Once conversion is complete, you can import your audio track. Double-click on the example file in the newly created **production** folder to get started. The file name is always your *character's name* with the word *head* added. So in our example, the character *dude* has the production file "dude head".

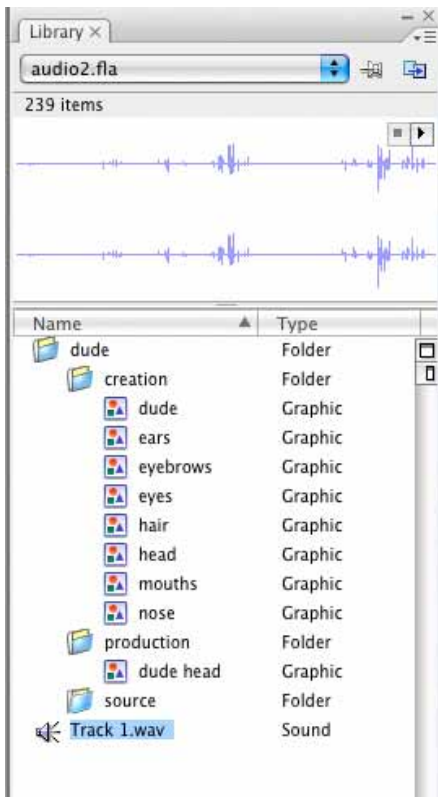


STEP 1: Select the **X mouths** layer in the Timeline window. Then create an audio layer above by clicking on the Insert Layer icon. Double-click on the layer name (it will be “Layer 9” or similar), and rename it **audio**.

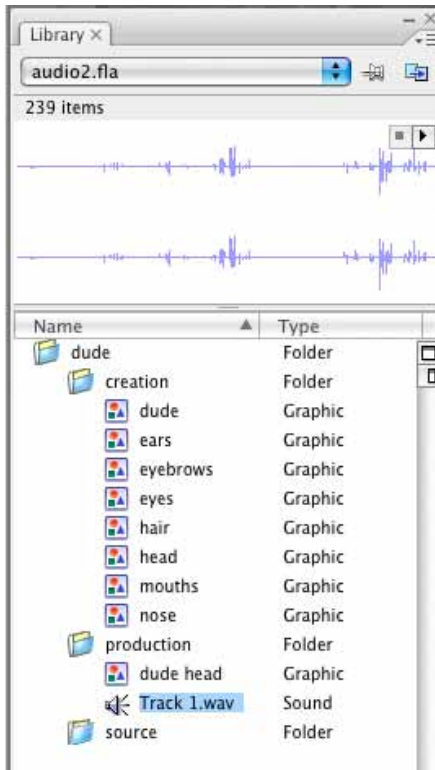


STEP 2: Record the audio track for your first animation in any application you like and move it into the **production** folder. Here’s how:

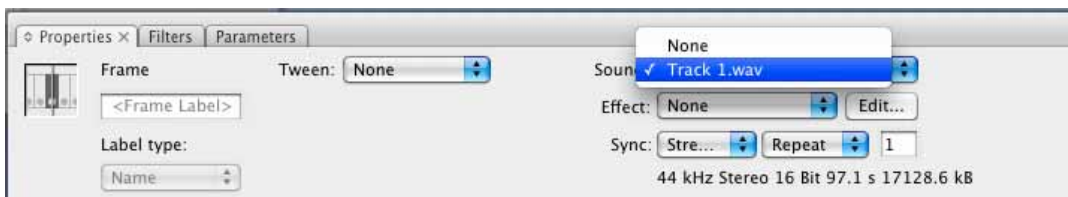
- a. Import the audio by selecting the **File > Import > Import to Library...** menu item.



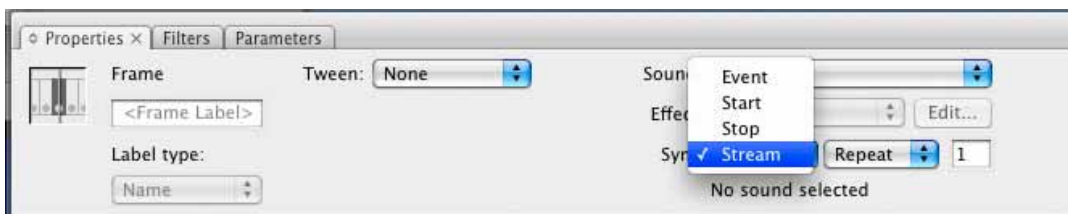
- b. You may find it convenient to store the imported audio file in the **production** folder.



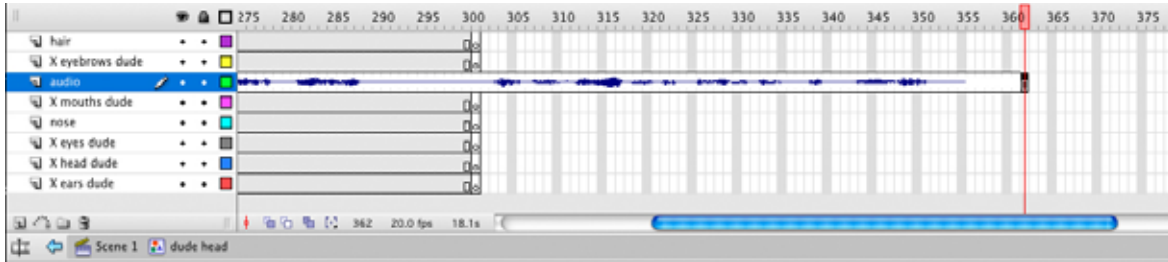
STEP 3: Set the streaming sound to your new audio. This is done by first selecting frame 1 in the **audio** layer of the Timeline window. Then, in the Properties window, choose your file from the “Sound” drop-down menu, or simply drag the audio file from the **production** folder to the stage.



Finally, select “Stream” from the “Sync” drop-down menu.



STEP 4: Extend the length of the clip in the timeline to cover the entire length of your audio clip. Do this by inserting a new frame (**Insert > Timeline > Frame** or press **F5**) after the end of the waveform graphic in the audio layer. If you still see a waveform, drag the last frame to the right until you see the waveform end.



Do the same with all of the face asset layers to match the length of the audio.



You are now ready to use the Xpress tool to animate your character in sync with your new audio. Simply follow the same logic you learned in the **Lip-Syncing Tutorial** starting at step 3.

You can also download an example file of **Professor X**, Double Barrel Digital's main character, and test it out. There are multiple audio pieces ready for you to play with, as well as a body that demonstrates how to incorporate an entire performance using Xpress.

Download the file from:

<http://www.doublebarreldigital.com/XpressCharacters/ProfessorX.zip>

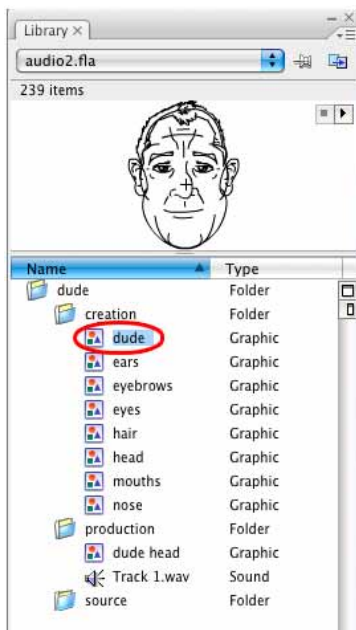
PART 4: UPDATING ART AND AUDIO FOR NEW ANIMATIONS

By now you have a rough sketch of your character that is already animating and talking. When you are ready to add more refined art, or additional positions and emotions, Xpress can update and sync your assets automatically.

To update the artwork in your animations:

STEP 1: Draw or import new artwork into the **creation** folder assets.

- a. Double-click on the file with your character's name in the **creation** folder.



- b. Follow steps 4 and 5 of the **Drawing Your Character** tutorial to add or update your artwork for any face part, position, or emotion.

You can update the artwork as well as add new emotions or positions to the rough sketches you started with. These features are explained in depth in the Advanced section of this guide. The more face parts and positions you define in the creation folder, the more you can animate with.

STEP 2: Once you have drawn or updated the creation source symbols, run the **Xpress - Creation Machine** command to update all of your animations with your new artwork.

To create additional animations using the same artwork:

STEP 1: Duplicate the production example file by selecting the file in the Library window, and choosing **Duplicate** from the Library menu (accessible in the upper right corner of the Library window). You'll be asked to select a name for your new animation.



STEP 2: Repeat the steps in the **Adding Audio** tutorial above to embed a new audio track. You are now ready to use the Xpress tool to animate your character to match the new audio.

Chapter 4 – Advanced Techniques

You’ve already learned how to make a rough sketch and turn it into a talking animation, which shows you the speed and flexibility of Xpress. However, there is much more you can do.

This first section includes a much more comprehensive example for creating an Xpress character from scratch with all emotions and positions. You may not be used to creating an entire character upfront, but there are a number of advantages in doing so. First, it will allow you to take full advantage of the power of Xpress. When you want an emotion or expression, it will be available to you right away without hindering your creative workflow by going back to the drawing board. In the end, you’ll find that your production is actually faster and more focused on the creative process of telling your story through artwork, animation, and voice.

This is why we recommend creating the artwork now, even if it is just a collection of rough sketches. Once you are further along with your animation, you can go back and refine only those expressions and positions you require.

Adding Emotion and Movement

By now you’ve probably noticed that face parts like the ears — unlike the hair, head and nose — have four layers in the Timeline window rather than just two. Besides the **reference** and **artwork** layers you are already familiar with, there are layers for **emotion labels** and **position labels**.

Here’s a look at the **emotion labels** layer:

frame	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
emotion labels	anger				bored				excited				fear				happy				normal				resolute				sad		

If you click on the first frame of the **emotion labels** layer, you’ll see that the *Frame* label box in the Properties window reads “anger”. This is the **anger** keyframe on the timeline. Click on the fifth frame in the emotions label timeline, and you will see that the *Frame* label reads **bored**, the ninth frame reads **excited**, and so on. Notice that the emotions are in alphabetical order and that each emotion has three labeled frames. These are separated by a blank frame to help keep the groups delineated clearly.

Now let's look at the **position labels** layer:

<i>frame</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
emotion labels	anger				bored				excited				fear			
position labels	normal	up	down		normal	up	down		normal	up	down		normal	up	down	

<i>frame (continued)</i>	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	happy				normal				resolute				sad		
	normal	up	down		normal	up	down		normal	up	down		normal	up	down

In the **position labels** timeline, you see groups of 3 keyframes named **normal**, **up**, and **down** aligned under each emotion. Notice again that every fourth frame is blank.

As you've probably guessed, you can easily customize these face parts for each emotion and position by modifying the **artwork** layer for each keyframe. Frame 1 of the **artwork** layer corresponds to the *anger* emotion in the *normal* position. Frame 2 is the *anger* emotion in the *up* position, and so on.

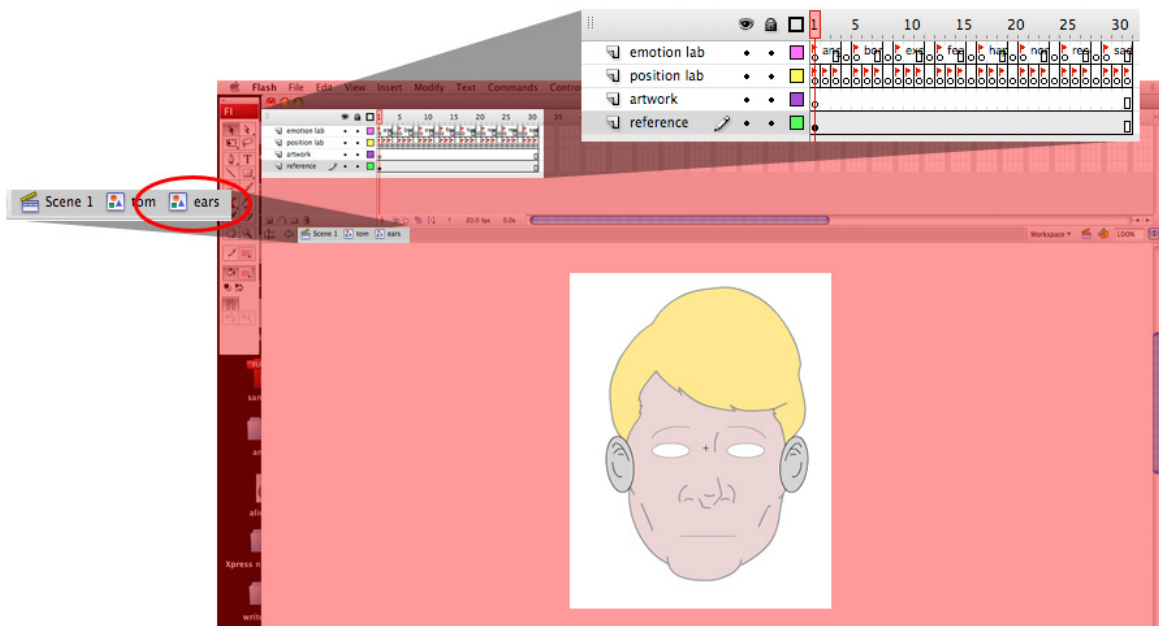
When creating a character from scratch, it is easiest to start with the basics: the hair, head shape and the nose. These face parts have no movement or emotion, so you can simply edit the template and replace your own artwork for each layer, as you saw in the **Start to Finish** tutorial.

The ears, as well as the eyebrows, allow for the *up*, *down* or *normal* position, and can change based on a variety of emotions, including: *anger*, *bored*, *excited*, *fear*, *happy*, *normal*, *resolute* and *sad*. This is the focus of the following tutorial.

PART 1: ADDING MOVEMENT AND EMOTIONS TO THE EARS

In this tutorial, we have already drawn the static head and hair artwork. We're now ready to add movement and emotions.

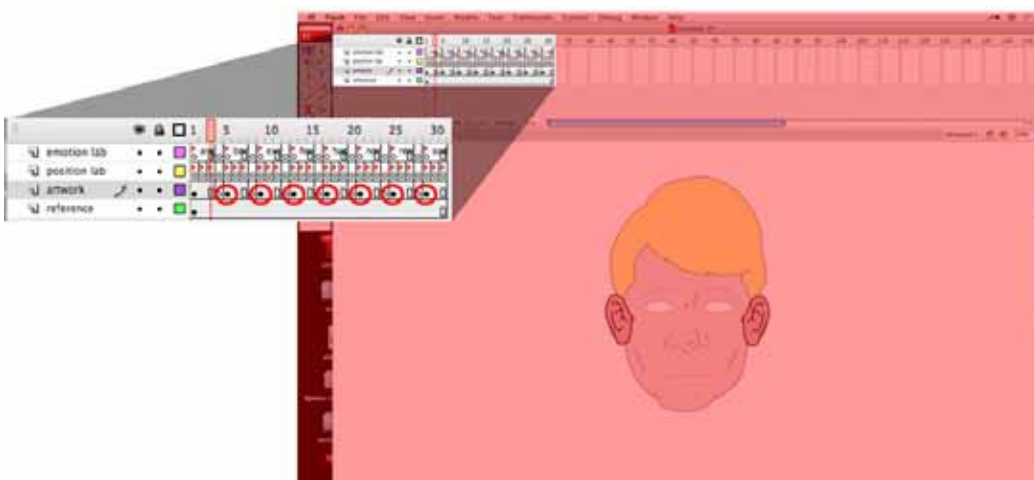
STEP 1: Choose the Selection Tool from the Flash toolbar and double-click on the **ears** on the main stage to open the corresponding graphic symbol in editing mode. (If your hair is covering the ears, simply drag the **ears** layer to a higher position while you work on them. Remember to drag your ears back when you have finished!)



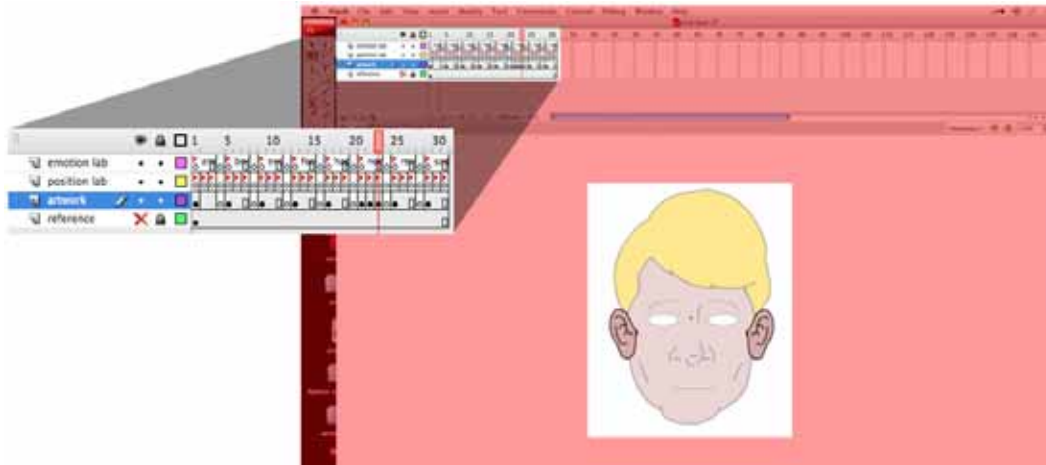
STEP 2: Select the **artwork** layer in the Timeline window. Then, create or paste the custom ears for your character on the main stage. This is the ears artwork for the *normal* emotion in the *normal* position. Later, you will alter the art to match other emotions and positions.



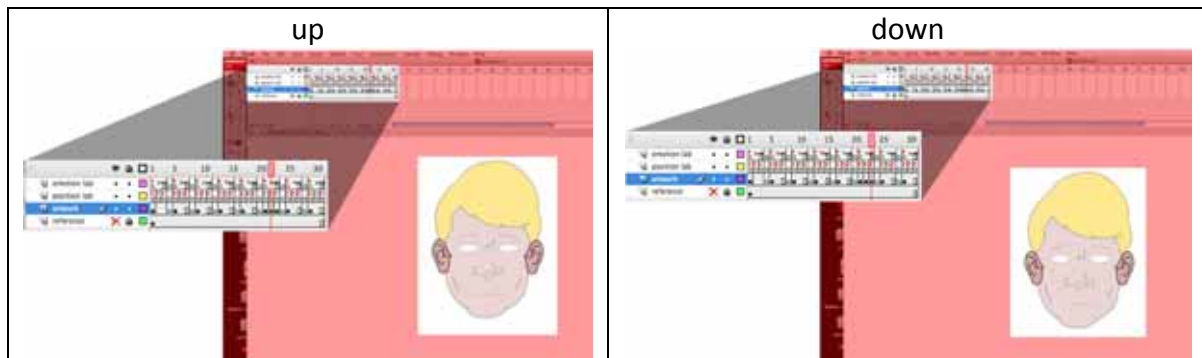
STEP 3: In order to make this easy and fast, you'll want all emotions and positions to be based on the basic ears artwork you drew or pasted in the previous step. To accomplish this, create a single keyframe for the *normal* position for each emotion. Frame 1 (the *normal* position of the *anger* emotion) is already a keyframe. Select frame 5 (the *normal* position of the *bored* emotion) in the **artwork** layer and choose the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**). Repeat for the *normal* position of the remaining emotions (frames 9, 13, 17, 21, 25 and 29).



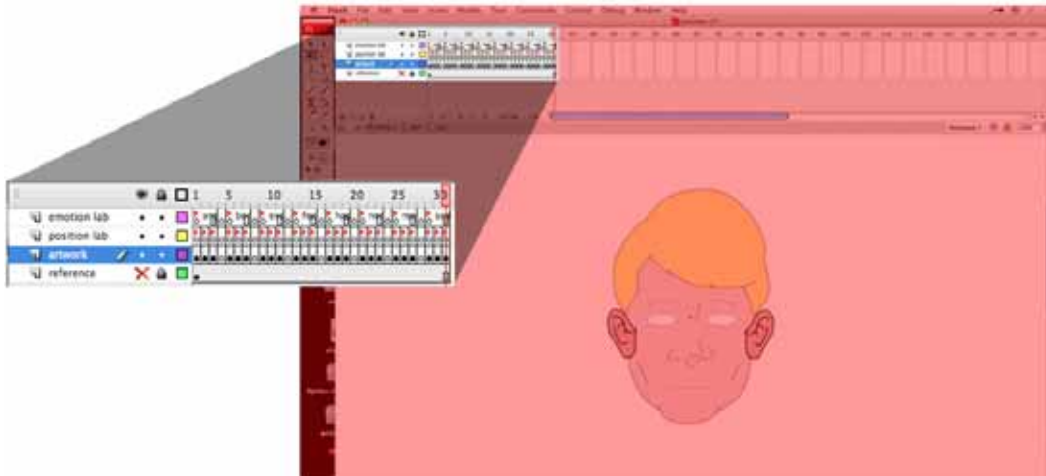
STEP 4: Now, complete the keyframes of the *normal* emotion. Frame 21 is already keyframe from the previous step. Highlight frames 22 and 23 in the timeline, corresponding to the *up* and *down* positions under the *normal* emotion, and press **F6** again. This will create 2 more keyframes, one for each position.



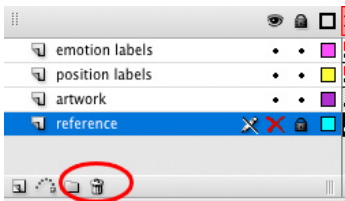
STEP 5: Now adjust the artwork for the ears. Frame 21 is the *normal* emotion in the *normal* position — no change is necessary. Select frame 22 in the **artwork** timeline. Frame 22 corresponds to the ears with the *normal* emotion in the *up* position. On the main stage, move the ears art up slightly and rotate to the desired position. Finally, select frame 23 — the ears with the *normal* emotion in the *down* position. On the main stage, move the ears art down slightly and rotate to the desired position.



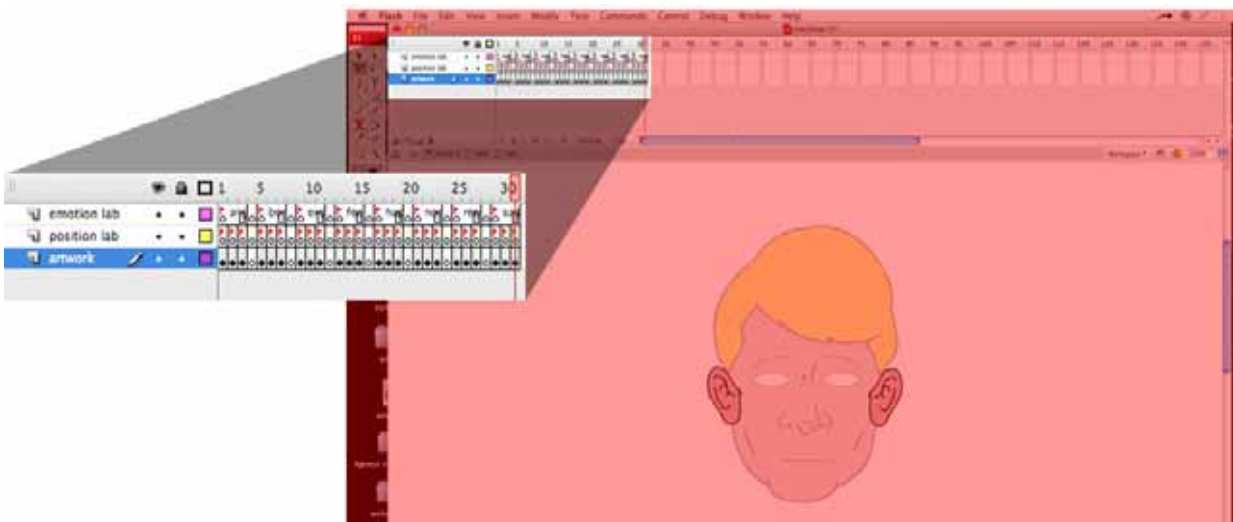
STEP 6: Now repeat the process for each emotion, making any adjustments to the art necessary to convey that emotion and position. You do not need to concern yourself with the blank keyframes, as Xpress will ignore those frames when creating your animation.



STEP 7: When you have finished, select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.



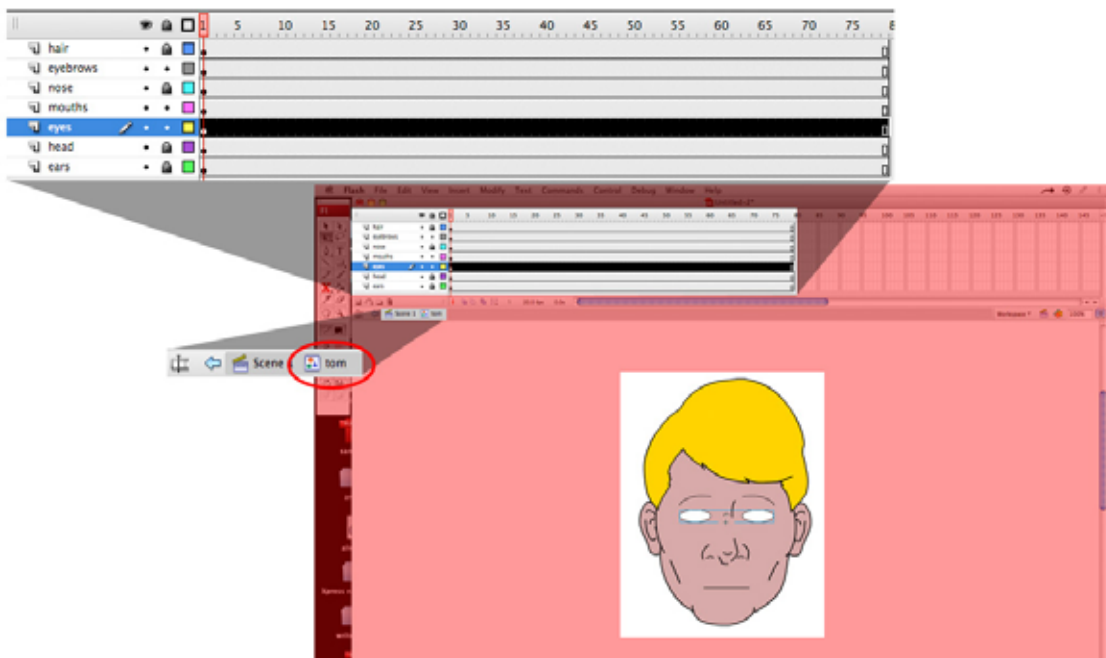
You're done with ears! Adding eyebrows works in exactly the same way, but you will probably want to begin with the eyes first. This is the subject of the next part of this tutorial.



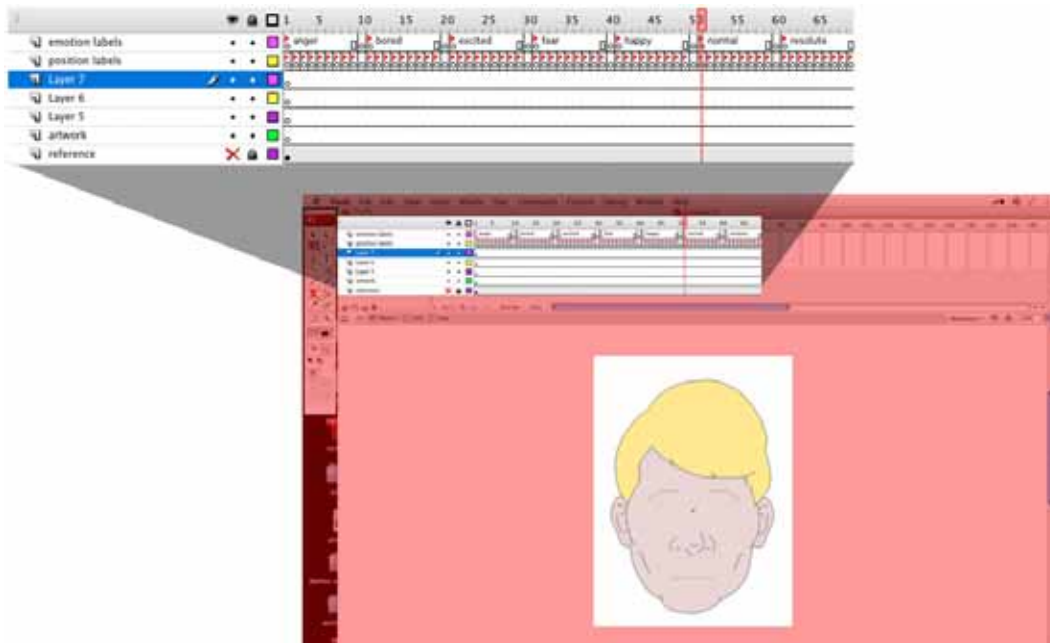
PART 2: ADDING MOVEMENT AND EMOTIONS TO THE EYES AND EYEBROWS

In this part we'll add artwork for the eyes and eyebrows. You'll notice that, just like the ears, the eyes begin with the same four layers in the Timeline window — **emotion labels**, **position labels**, **artwork** and **reference**. However, the eyes have nine position frames for each emotion. These correspond to: *open*, *left*, *right*, *up*, *down*, *wink left*, *wink right*, *closed* and *closed tight*.

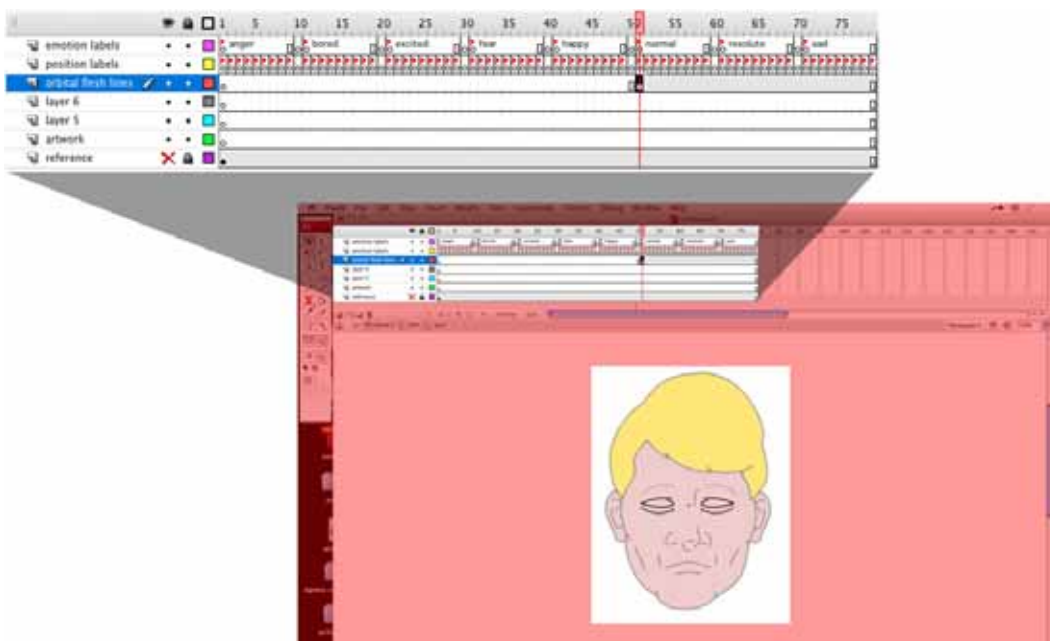
STEP 1: Return once again to the master graphic symbol (the one with your character's name) by selecting it in the stage list. Then, double-click on the **eyes** on the main stage to open the corresponding graphic symbol in editing mode.



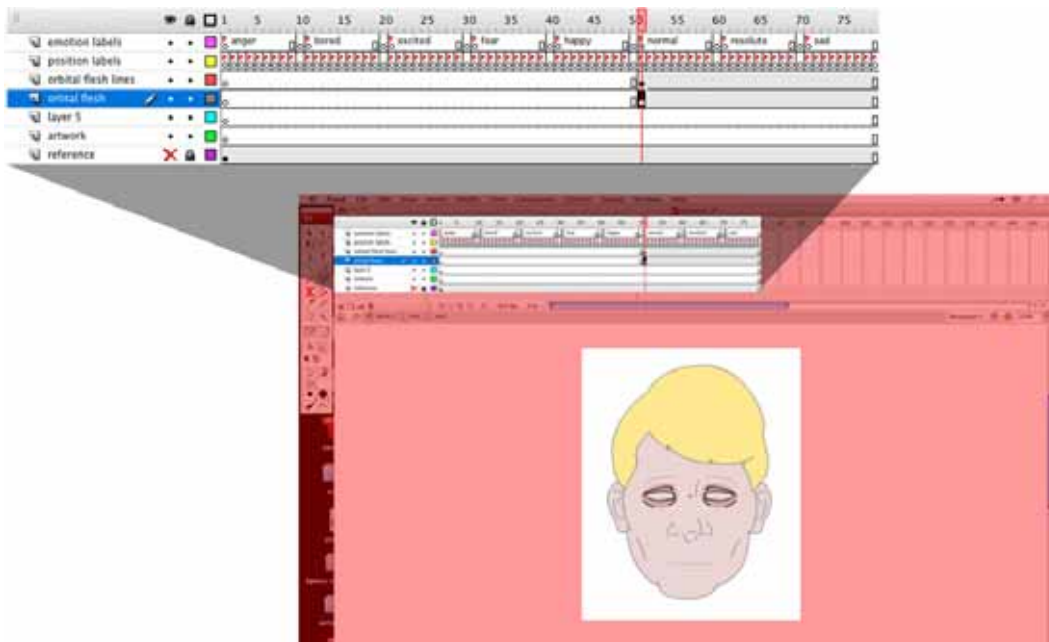
STEP 2: Select the **artwork** layer in the Timeline window. Now create three more blank layers above the artwork layer by clicking on the Insert Layer icon in the Timeline window.



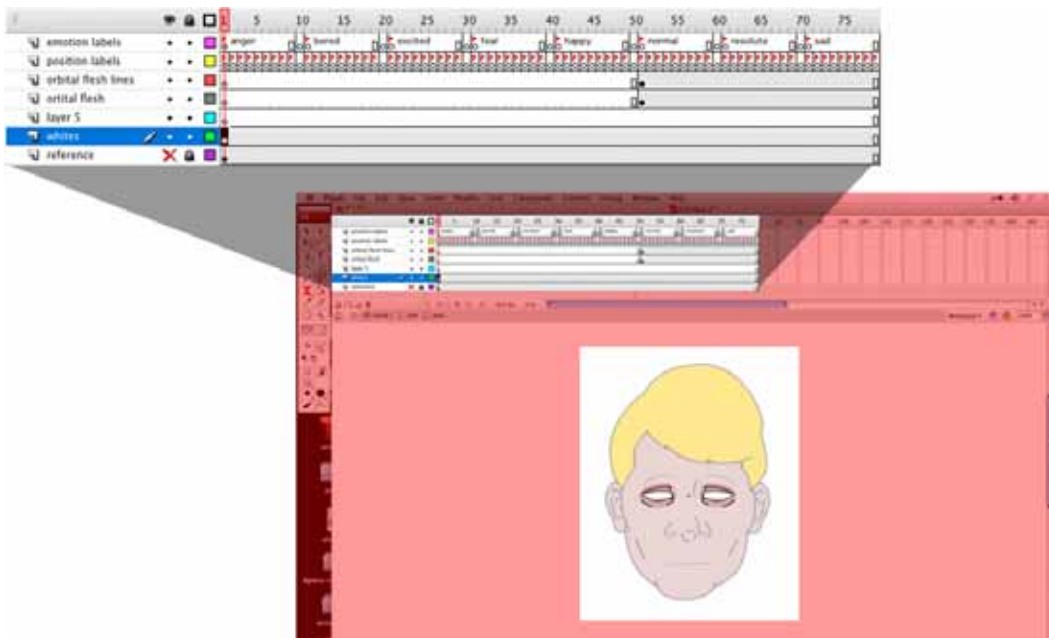
STEP 3: Now select the top new layer (Layer 7). Rename this layer by double-clicking on its name in the Timeline window and typing in **orbital flesh lines**. Select frame 51 (the open position for the normal emotion), then choose the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**). Now, create or paste the art for the lines that define the shape of the eyes in the open position for the normal emotion on the main stage



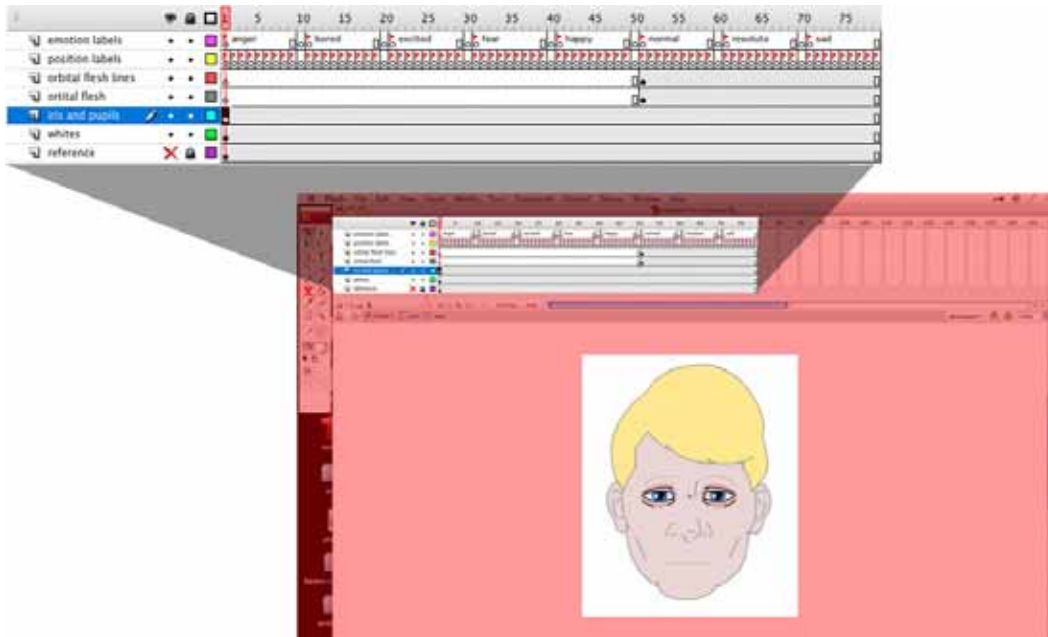
STEP 4: Select the next layer (Layer 6). Rename this layer by double-clicking on its name in the Timeline window and typing in **orbital flesh**. Select frame 51 then choose the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**). Then paste or paint the skin color under the lines of the orbital flesh. (Having the lines and color separated into two layers will make editing easier in the long run.)



STEP 5: Select the **artwork** layer and create or paste the art for the whites of the eyes on the main stage (on frame 1). Rename this layer **whites**. In most cases, the whites are the same for every emotion, so you will not need to specify a keyframe.



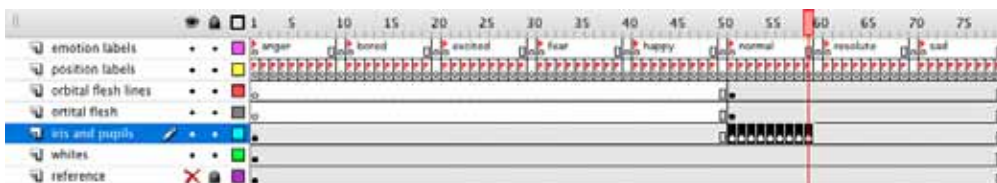
STEP 6: Now select the remaining blank layer (Layer 5) sandwiched between **orbital flesh** and **whites**, and create or paste the art for the iris and pupils on the main stage. Rename this layer **iris and pupils**.



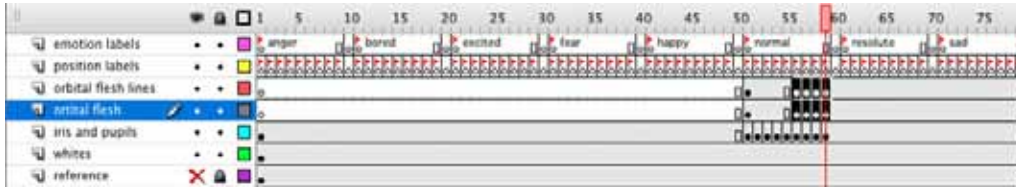
Tip: You can create as many layers/masks of art as you need (and name them anything you like) as long as all the art is aligned under the proper emotion and position label keyframes. You may also use layer folders and mask layers, as long as they are only 1 layer deep.

STEP 7: Before adding the requisite artwork you will need to create keyframes in the proper layers.

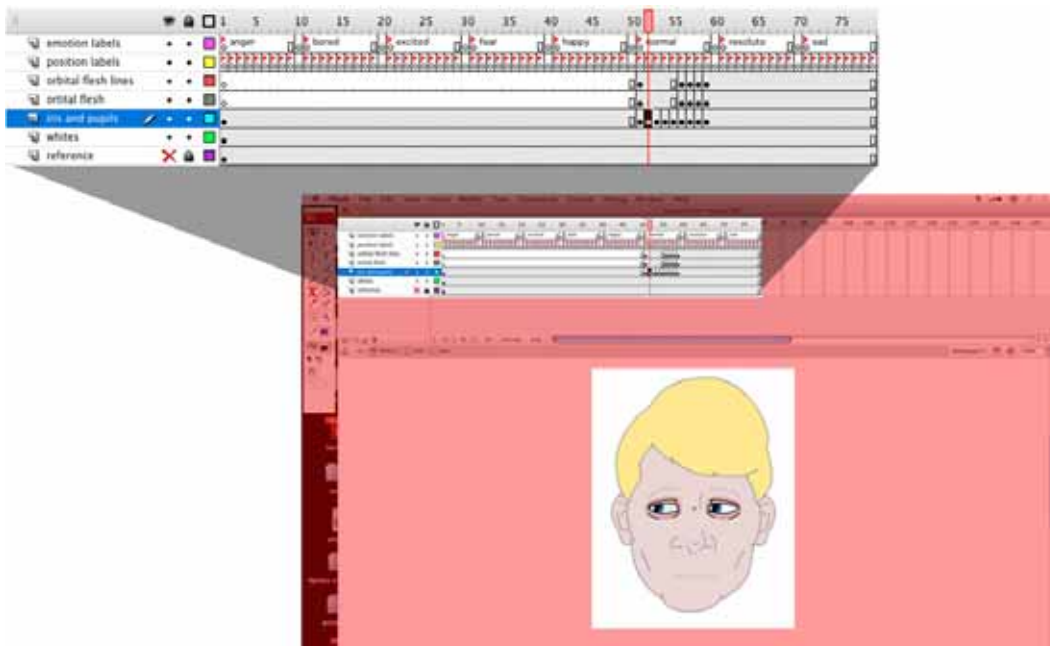
- a. Start by selecting frames 51–59 in the **iris and pupils** layer in the timeline, which correspond to the *normal* emotion. Then choose the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**) to create nine keyframes that will correspond to each position.



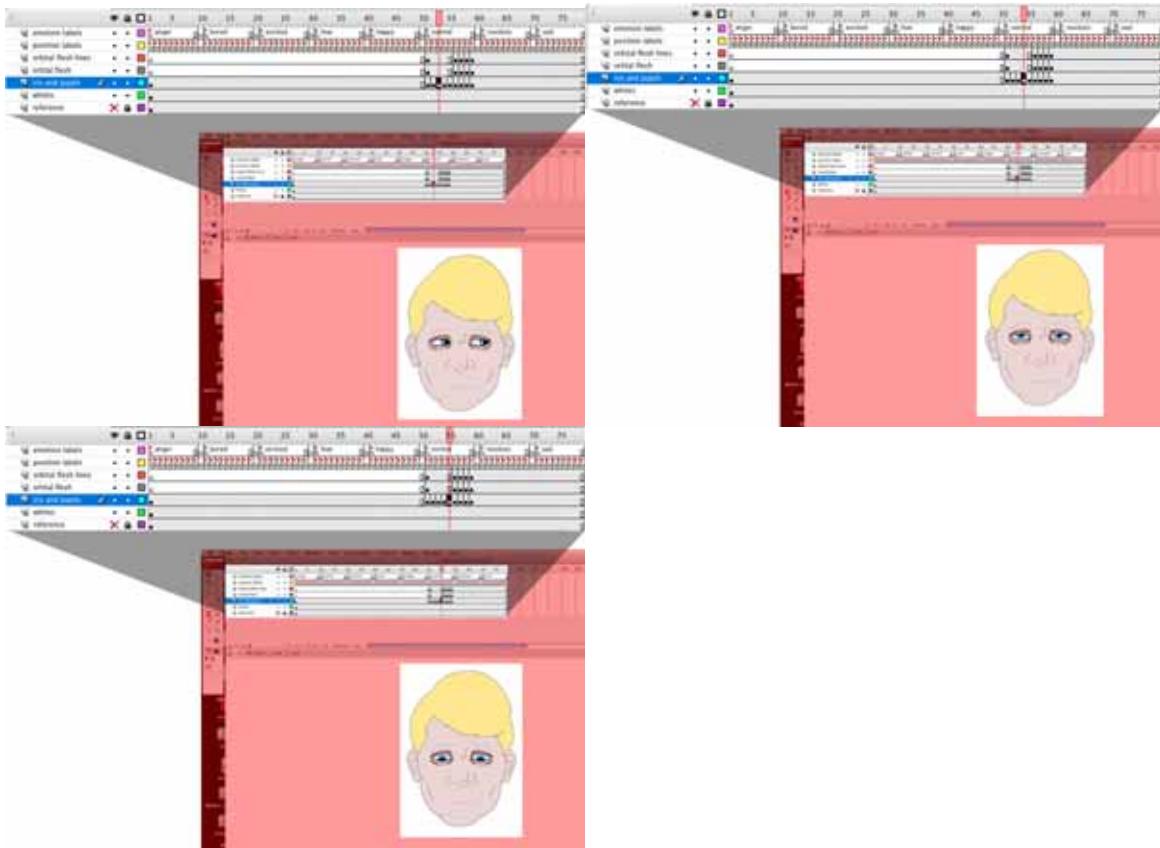
- b. Next, select frames 56–59 on both layers — corresponding to the positions *wink left*, *wink right*, *closed*, and *closed tight* — and press **F6** one last time to create 4 individual keyframes.



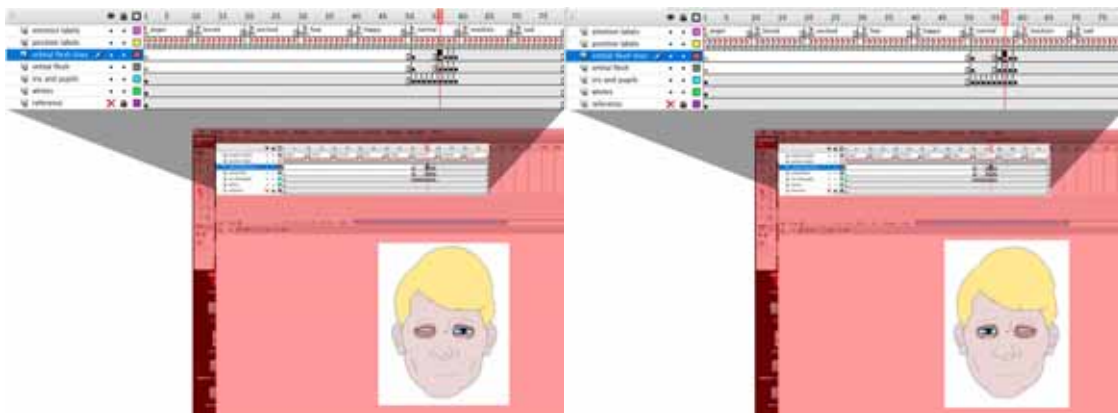
STEP 8: Select the **iris and pupils** layer and click on the frame aligned under the position *left* (frame 52). Adjust the art on the main stage to show the iris and pupils on the left.



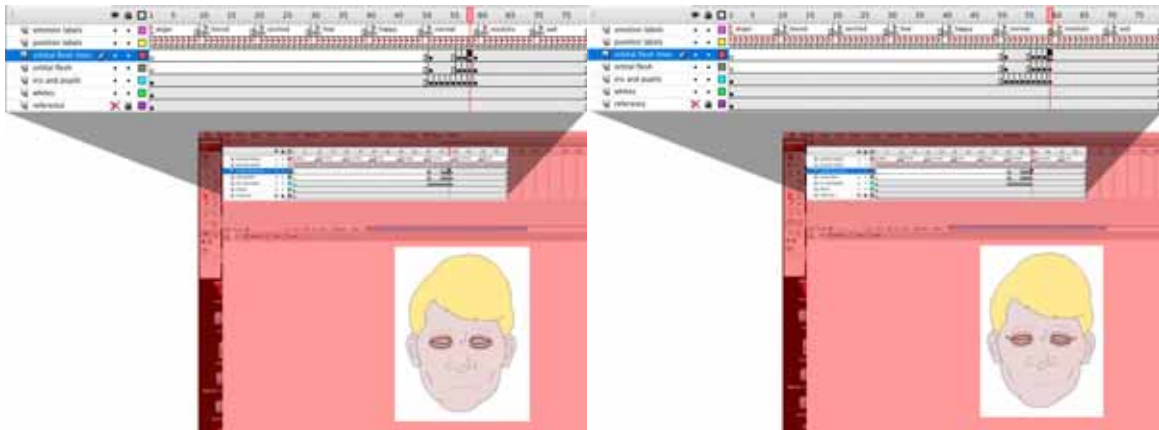
STEP 9: Repeat the same procedure to show the iris and pupils on the *right* (frame 53), *up* (frame 54) and *down* (frame 55).



STEP 10: Now select the **orbital flesh lines** layer frame and click on the frame aligned under the position *wink left* (frame 56). Replace the art of the left eye on the main stage with new art of a closed eye. (Make any adjustments, if necessary, to the **orbital flesh** layer.) Do the same for *wink right* (frame 57).

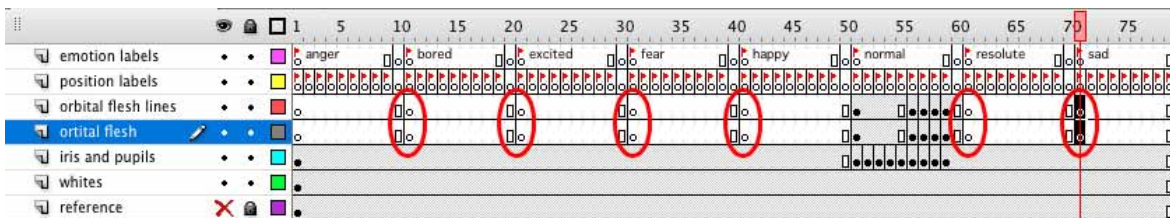


STEP 11: Continue the same process on the **orbital flesh lines** layer (and **orbital flesh** layer, if necessary), and create or paste the art for eyes *closed* (frame 58), and eyes *closed tightly* (frame 59).

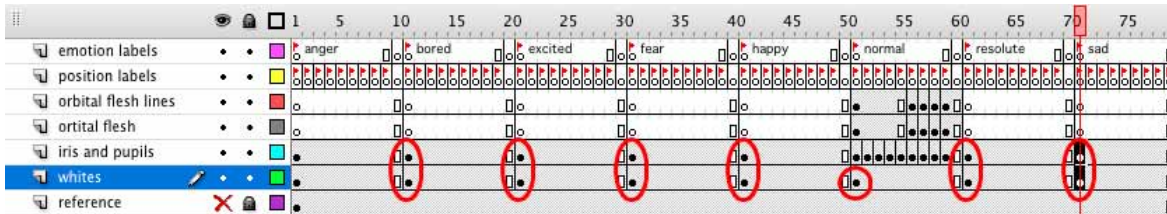


STEP 12: Now that the eyes are complete for the *normal* emotion, you can work on other emotions. The iris and pupil and the whites artwork you drew for the *normal* emotion can be reused; you only have to insert keyframes. The orbital flesh artwork, however, will be unique for different emotions, so you will need to define blank keyframes for these layers.

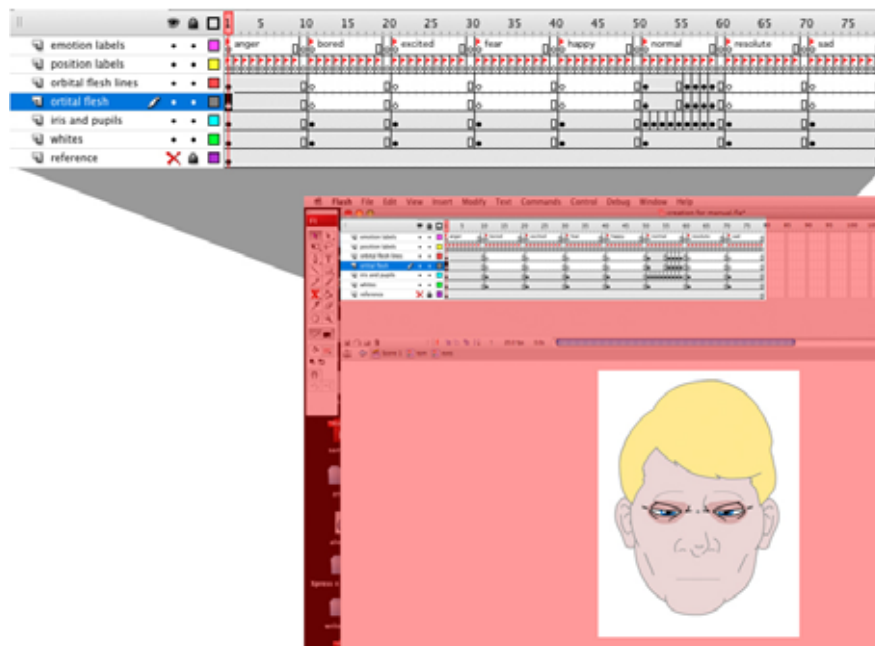
- a. Select frame 11 on both the **orbital flesh** and **orbital flesh lines** layers and choose the menu item **Modify > Timeline > Convert to blank Keyframes** (or press **F7**) to create new blank keyframes. Repeat for each emotion (frames 21, 31, 41, 61, and 71).



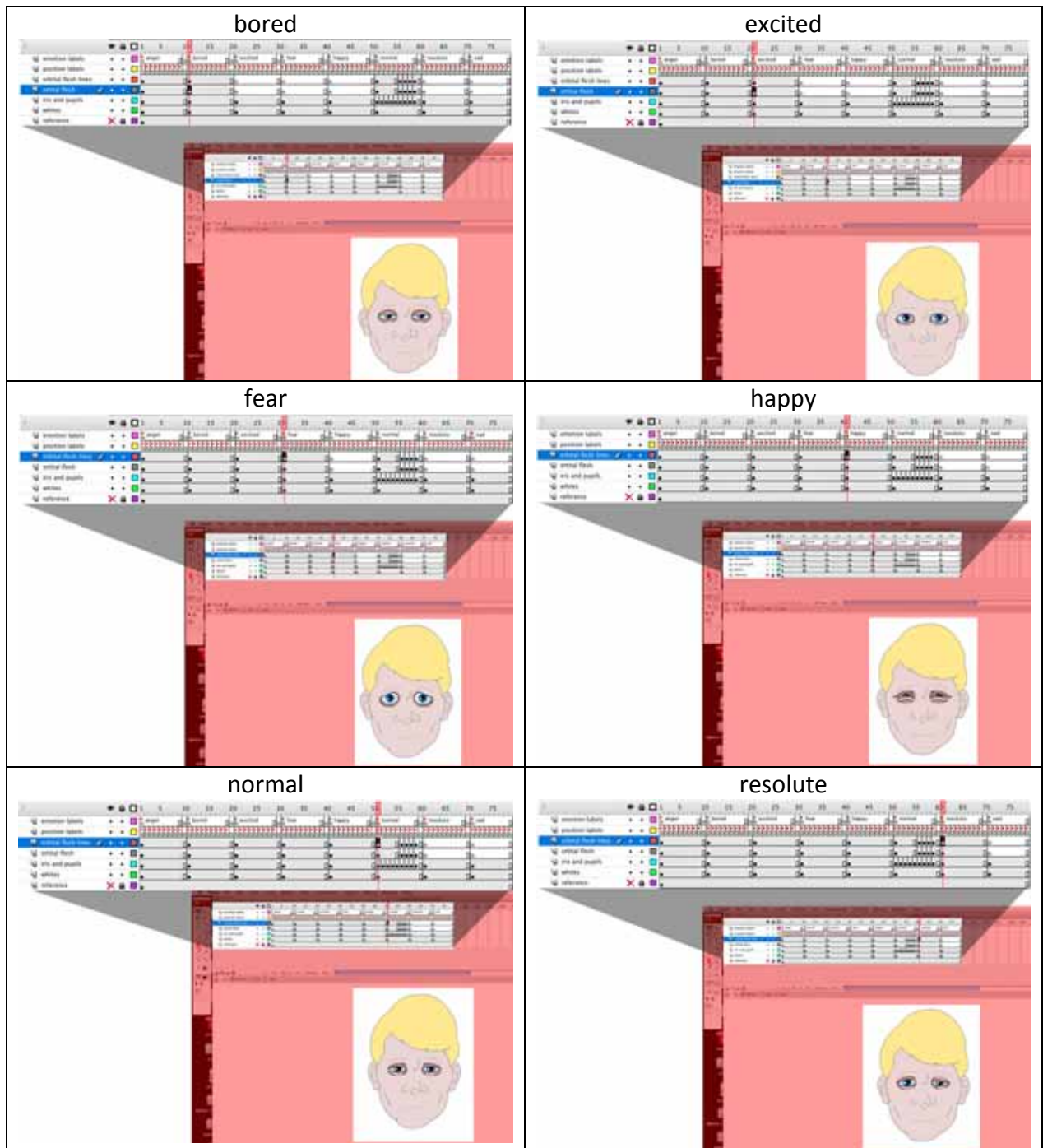
- b. Select Frame 11 on the **iris and pupil** and the **whites** layers. Then choose the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**) to create a new keyframe. Repeat with each open position for each emotion (frames 21, 31, 41, 61 and 71). Also, remember to create a new keyframe on frame 51 of the **whites** layer to keep the *normal* whites unique.

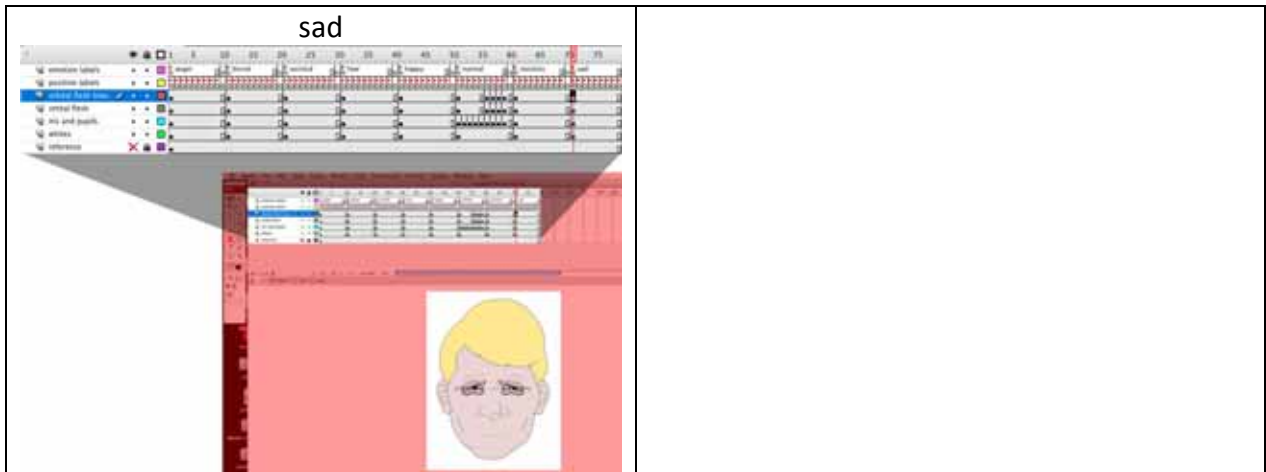


STEP 13: At this point you are ready to create or paste your art for the *anger* emotion. It often helps to turn off the **iris and pupils** layer to delineate the shape of the eye better and turn on the Onion Skin tool in the Timeline window to provide a reference for the normal eye shape. Create or paste the art on the main stage to reflect the proper shape for this emotion on the **orbital flesh lines** layer. Make sure to fill in the **orbital flesh** layer as well. When you're done, remember to turn off the Onion Skin tool and turn on the **iris and pupils** layer to make sure the eyes look right.

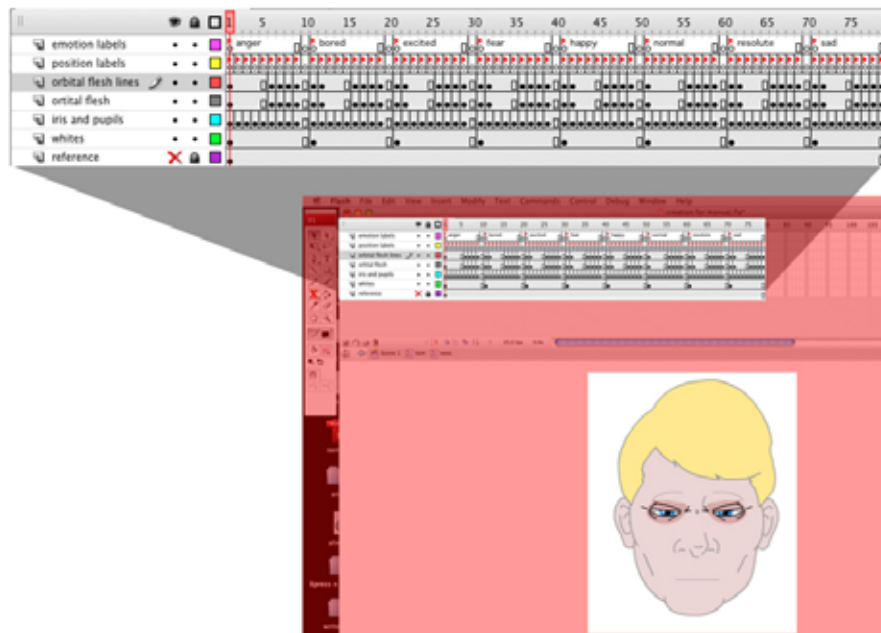


STEP 14: Repeat the process for each of the remaining emotions you plan to use in your animation. (You may also need to customize the **iris** and **pupils** or **whites** layer for some emotions.) Here are examples of each:





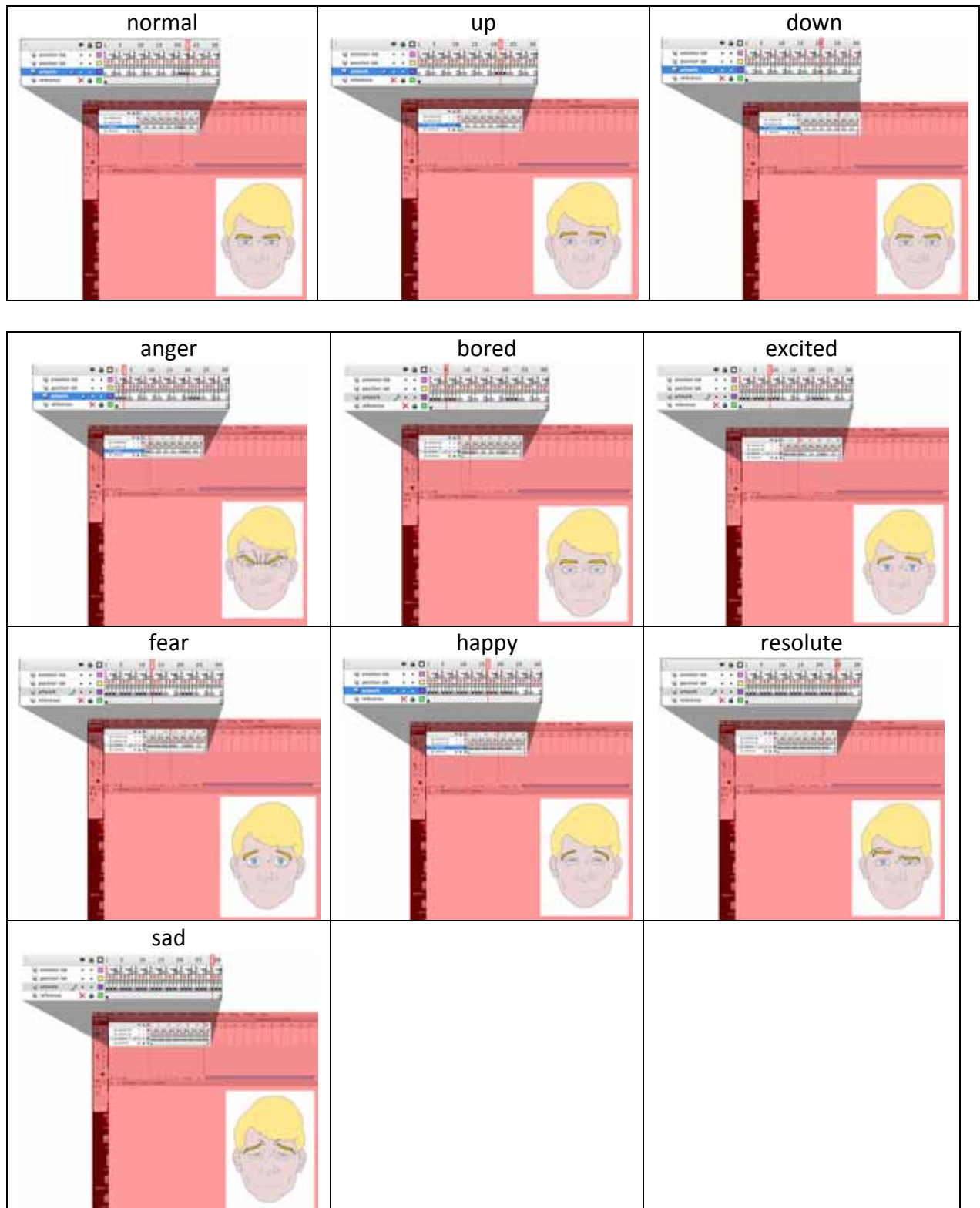
STEP 15: Now that you have created the *normal* position for each emotion, you will want to repeat steps 7 through 11 for each emotion to complete the remaining positions.



STEP 16: When you have finished, select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.

STEP 17: Return once again to the master graphic symbol (the one with your character's name) by selecting it in the stage list. Choose the Selection Tool from the Flash toolbar and double-click on the **eyebrows** on the main stage to open the corresponding graphic symbol in editing mode.

STEP 18: You'll notice that the eyebrows have all the same emotions, as well as just three positions like the ears: *normal*, *up* and *down*. Follow the same procedure you used for the eyes and ears to create eyebrows for each emotion and position. Here are examples:



STEP 19: When you have finished, remember to select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.

You're almost done! Now that your character has art for each emotion and position you plan to use, you're ready to add the mouth movements, which is the subject of part 4 of this tutorial.

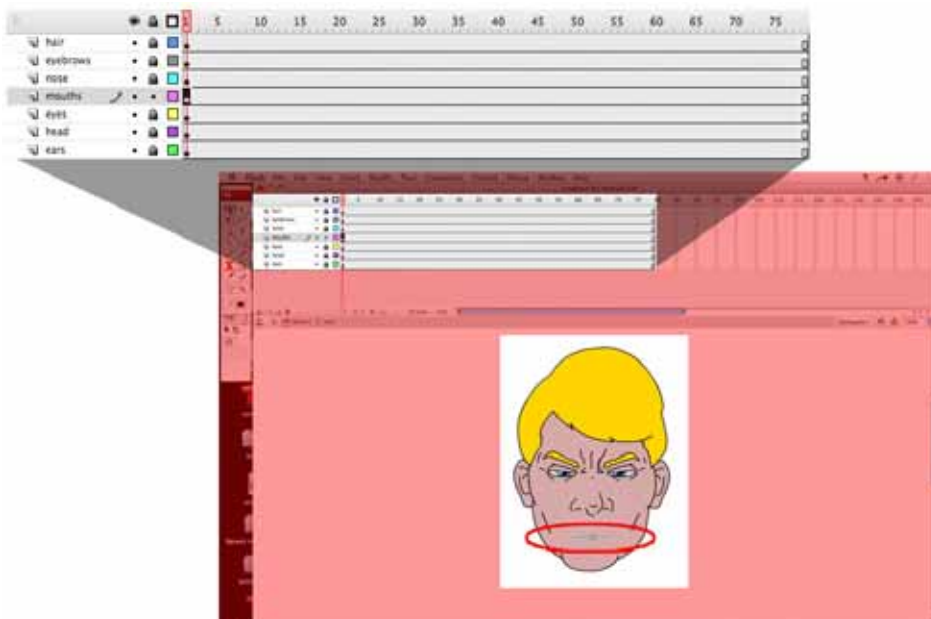
PART 3: ADDING MOUTH MOVEMENTS TO ALL EMOTIONS

In this part we'll add artwork for each of the mouth positions. Just like the ears and eyes, the artwork for the mouth can change based on a variety of emotions, including: *anger*, *bored*, *excited*, *fear*, *happy*, *normal*, *resolute* and *sad*. As you learned in the **Start to Finish** tutorial, the mouth also has a range of seven positions, each of which corresponds to letter sounds of the alphabet. The *mouth8* position corresponds to a closed mouth.

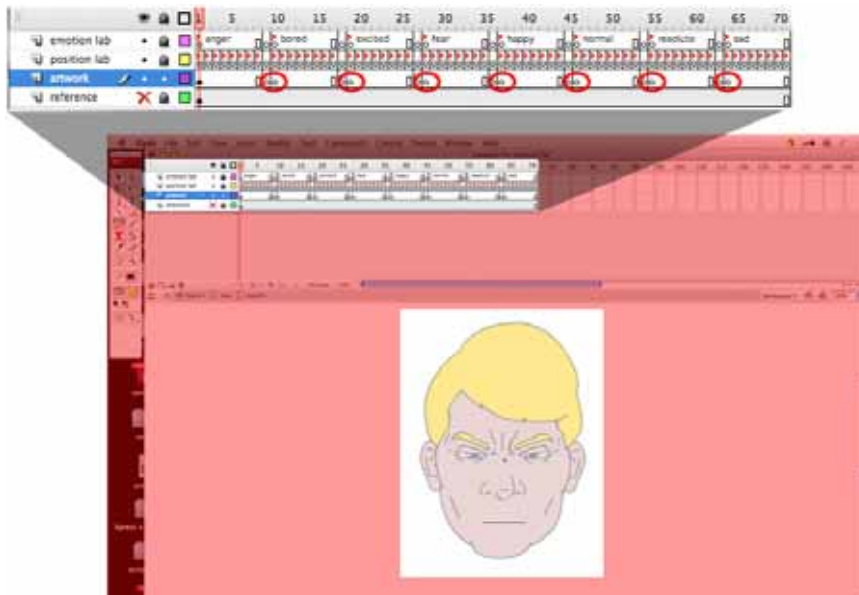
frame	1	2	3	4	5	6	7	8	9
emotion labels	anger								
position labels	mouth8	mouth1	mouth2	mouth3	mouth4	mouth5	mouth6	mouth7	
Corresponding letter	<i>closed</i>	A – I H	B – M P	C – D G – J K – R CH – S T – N X – Z Q – SH	E	F – V	L – TH	O – U W – Y	

Note: There are 26 letters in the English alphabet, but when we pronounce these sounds, many have the same mouth shape, which is why Xpress uses just seven mouth positions in addition to the closed mouth.

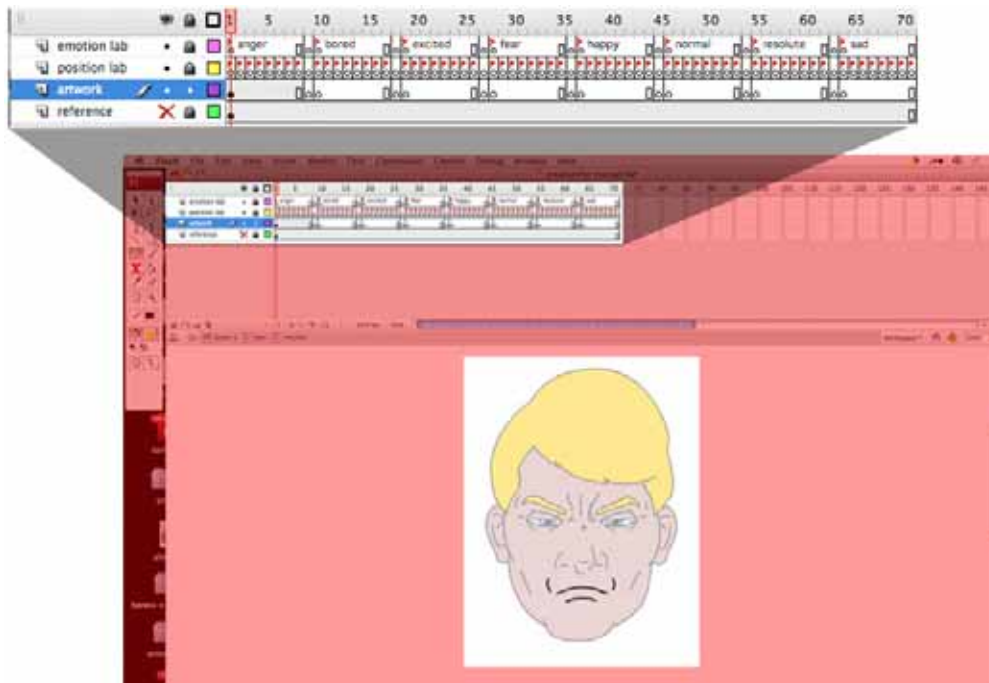
STEP 1: Return once again to the master graphic symbol (the one with your character's name) by selecting it in the stage list. Choose the Selection Tool from the Flash toolbar and double-click on the **mouth** on the main stage to open the corresponding graphic symbol in editing mode.



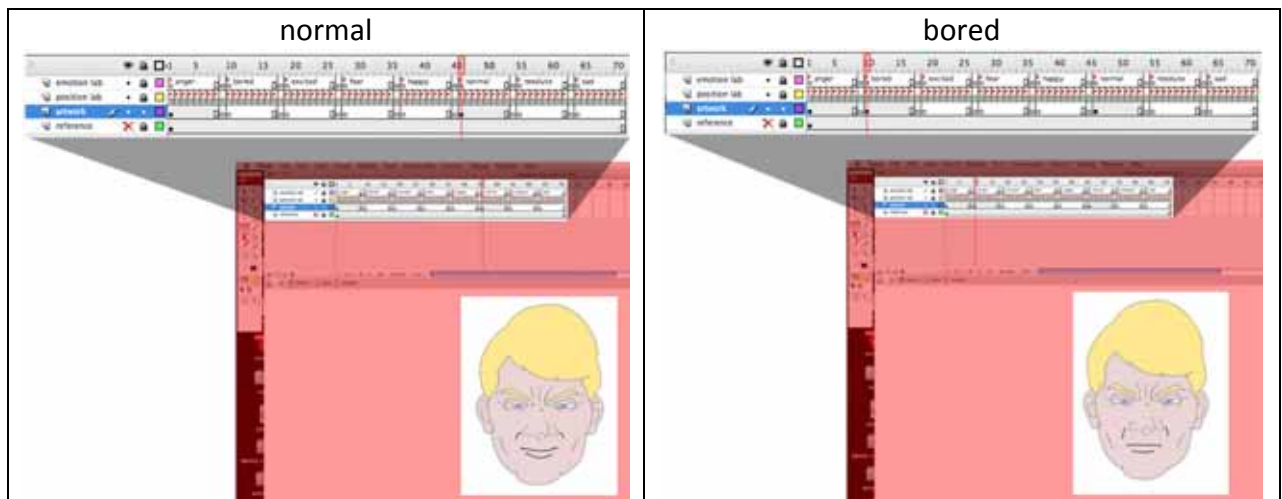
STEP 2: Begin by creating a blank keyframe under the *mouth8* position for each emotion in the **artwork** layer. Frame 1 (the *mouth8* position of the *anger* emotion) is already a keyframe, so start with frame 10. Create a blank keyframe by selecting the menu item **Modify > Timeline > Convert to Blank Keyframes** (or press **F7**). Repeat the process of creating blank keyframes under the *mouth8* position for each emotional state (frames 19, 28, 37, etc.).

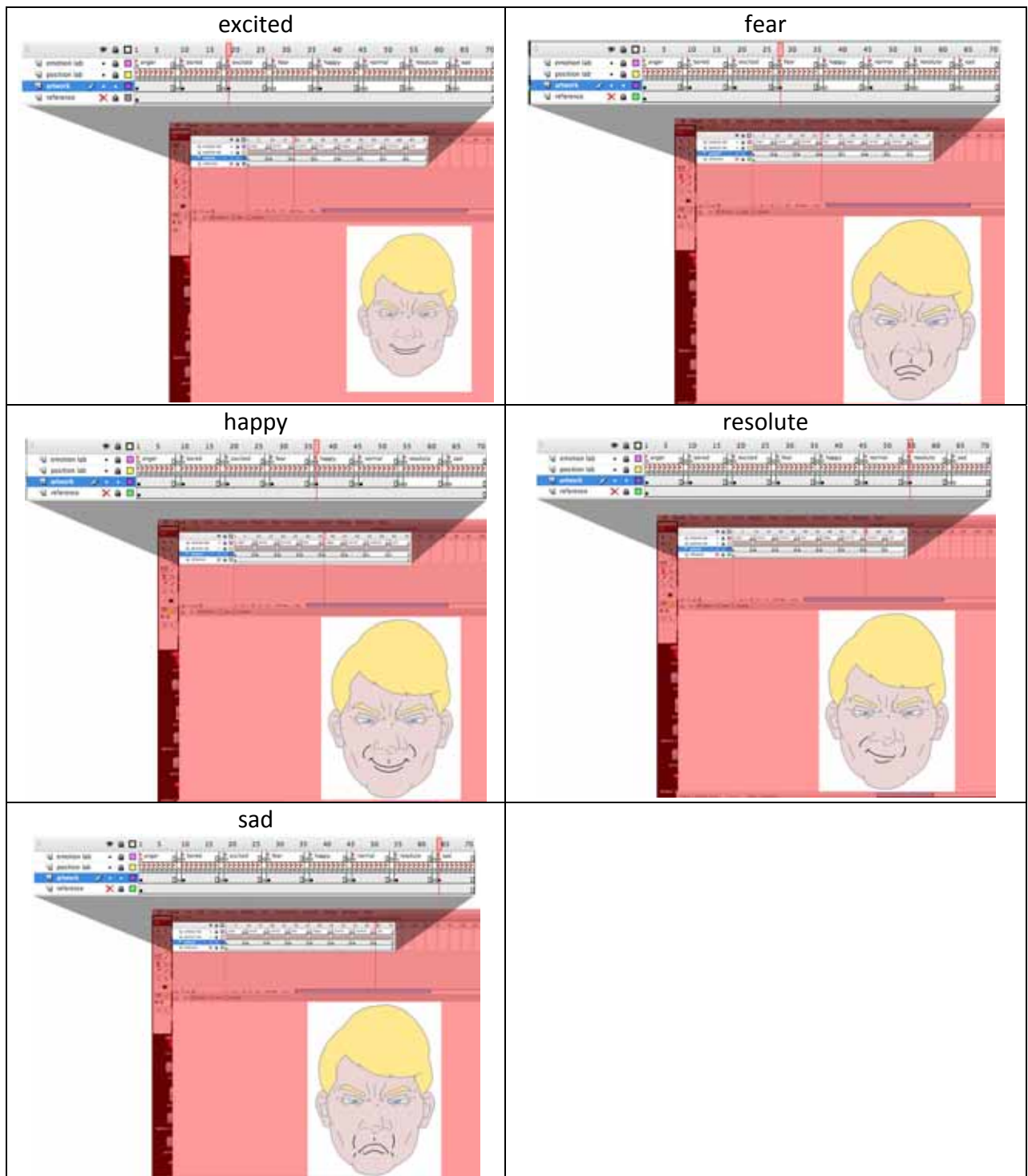


STEP 3: Next, create or paste the art on the main stage for the closed mouth position of each emotion. In our example, you see the closed mouth art for the *anger* emotion (frame 1).

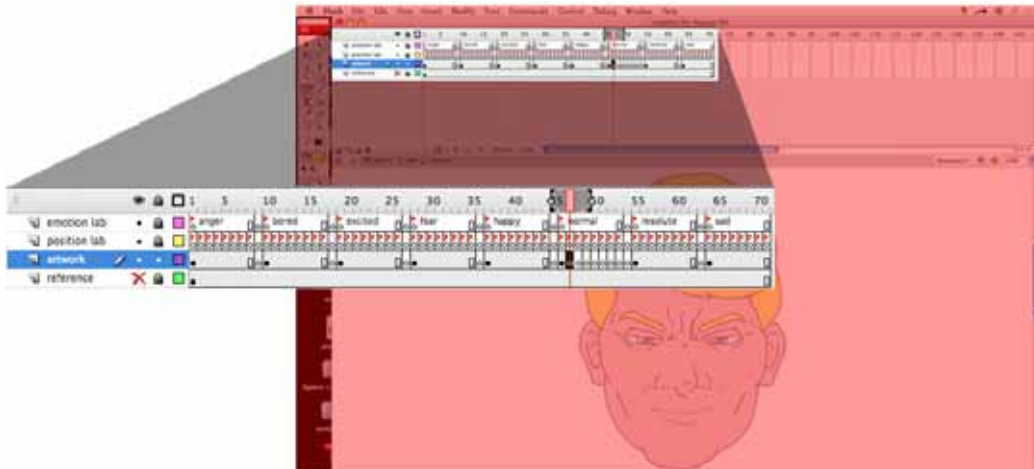


STEP 4: Continue drawing or pasting the closed mouth art under the *mouth8* position for each emotional state. Use the Onion Skin tool to reference the already created mouth art in order to keep your mouths registered properly. Here are examples of closed mouths for the remaining emotions:

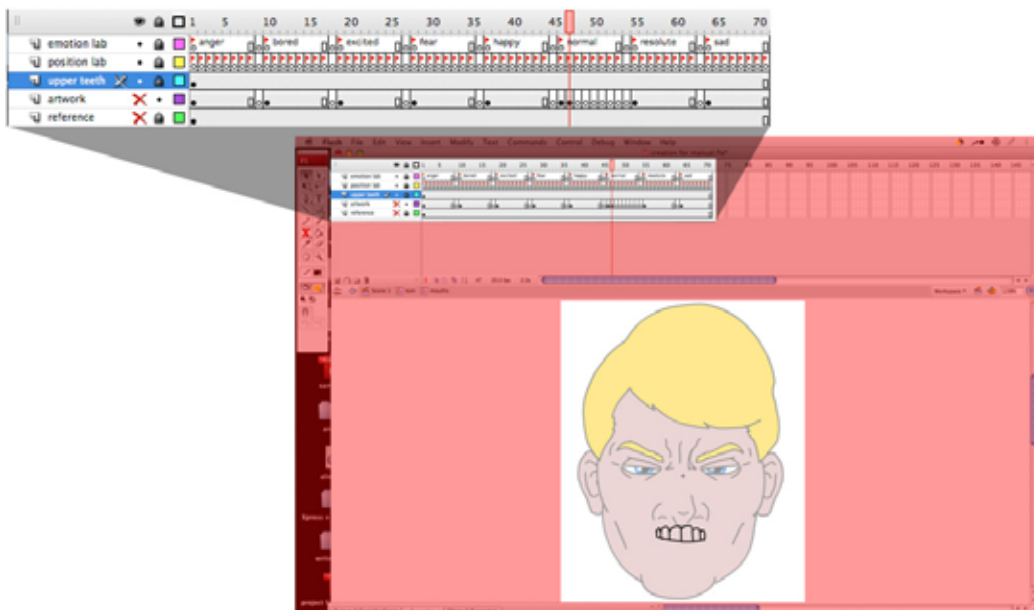




STEP 5: Now you can add artwork for the other mouth positions. It's best to begin with the *normal* emotion. In the **artwork** layer, select frames 47–53, corresponding to the remaining *mouth1*–*mouth7* positions. Create a series of seven blank keyframes by selecting the menu item **Modify > Timeline > Convert to Blank Keyframes** (or press **F7**).

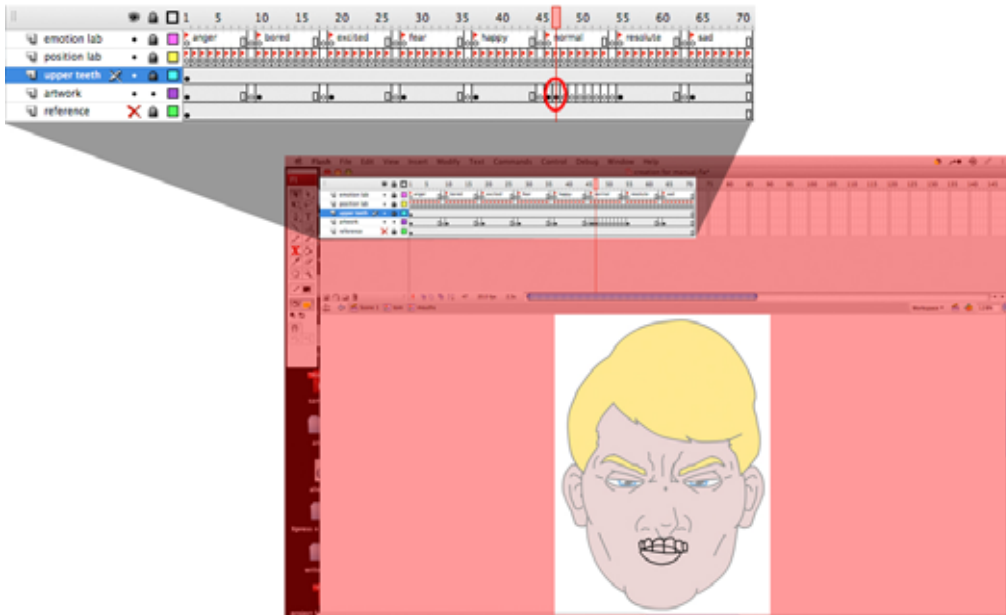


STEP 6: Next, add the teeth. Select the **artwork** layer and create a blank layer above by clicking on the Insert Layer icon in the Timeline window and renaming it **upper teeth**. Create or paste your artwork for the teeth.

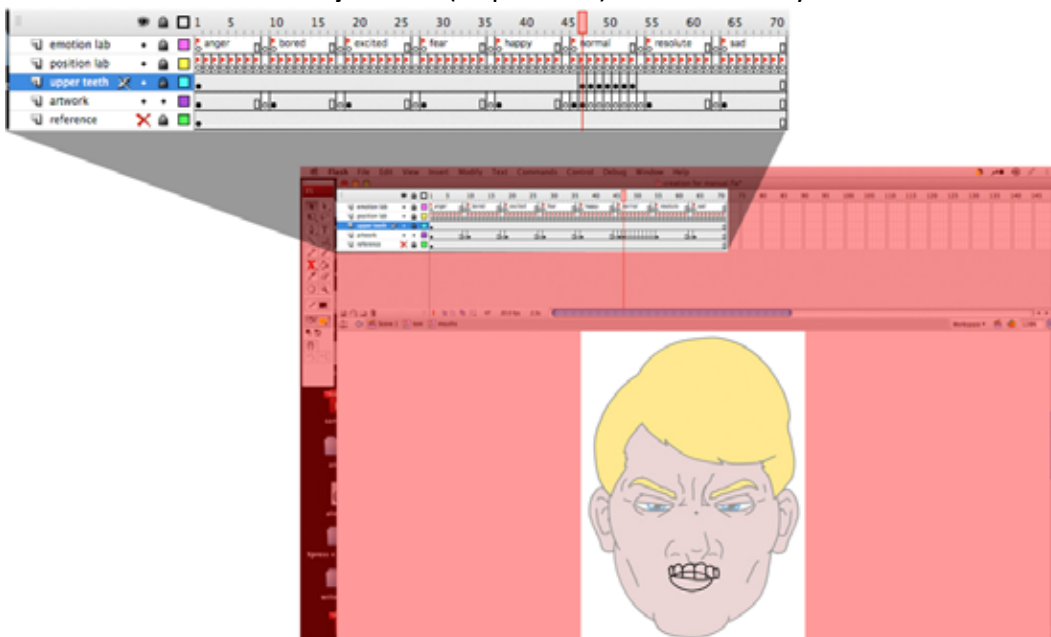


Tip: The upper teeth are anchored to the skull and do not move when a person talks. Only the bottom teeth attached to the jaw will move. By creating the upper teeth on a separate layer it allows you to view the teeth in relation to all the open mouth positions that you are about to create. This example shows the upper teeth above the artwork, but you may be more comfortable drawing the teeth below. Remember, you may use as many layers/masks as you need to create the custom art for your character. Just be sure to keep them all aligned under the correct emotion and position labels.

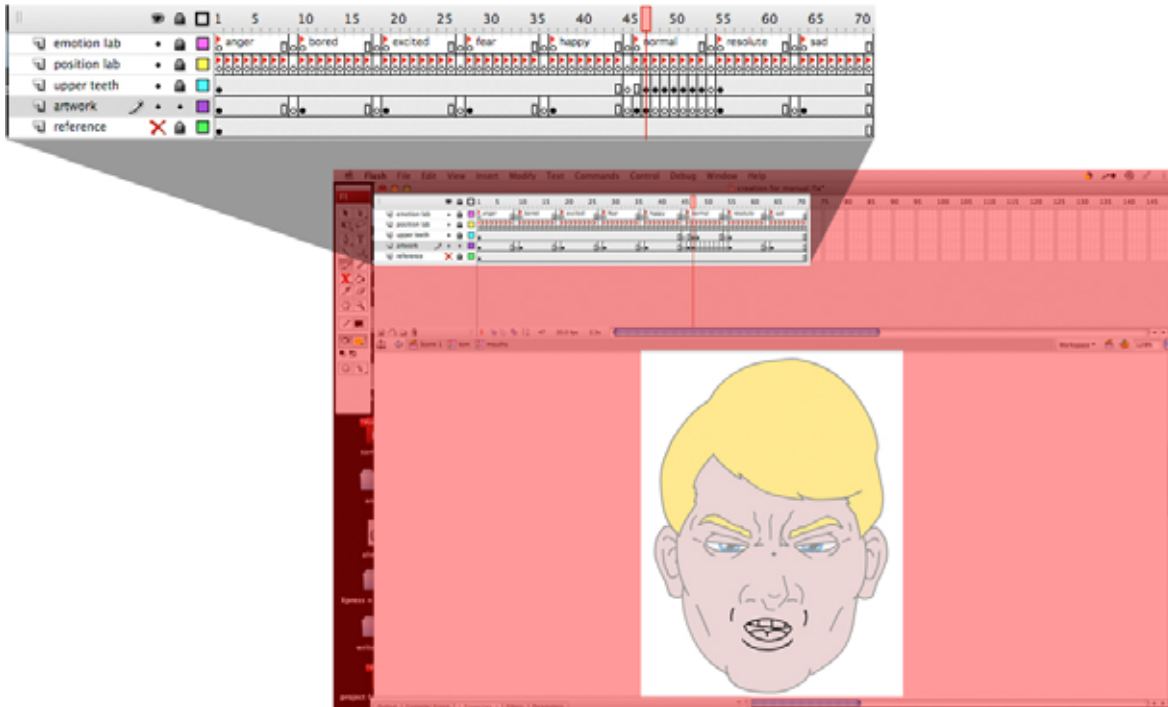
STEP 7: Select the **artwork** layer again, and click on the blank keyframe aligned under *mouth1* for the *normal* emotion (frame 47). Now place or create the art for *mouth1*, which corresponds to the mouth shape for the letter “A”.



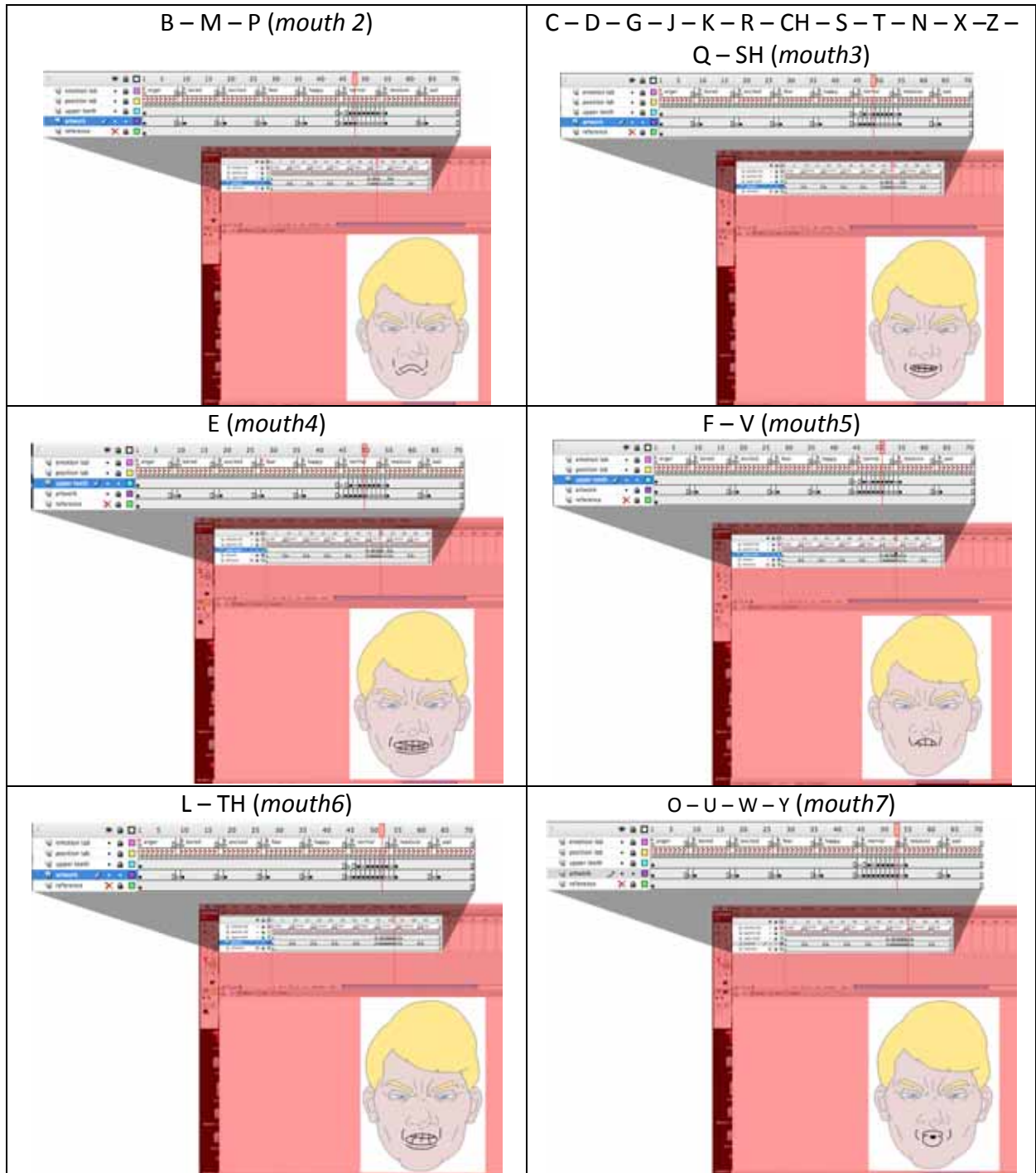
STEP 8: Once again, select the **upper teeth** layer and highlight the frames aligned under *mouth1–mouth7* for the *normal* emotion (frames 47–53). Select the menu item **Modify > Timeline > Convert to Keyframes** (or press **F6**) to create 7 keyframes.



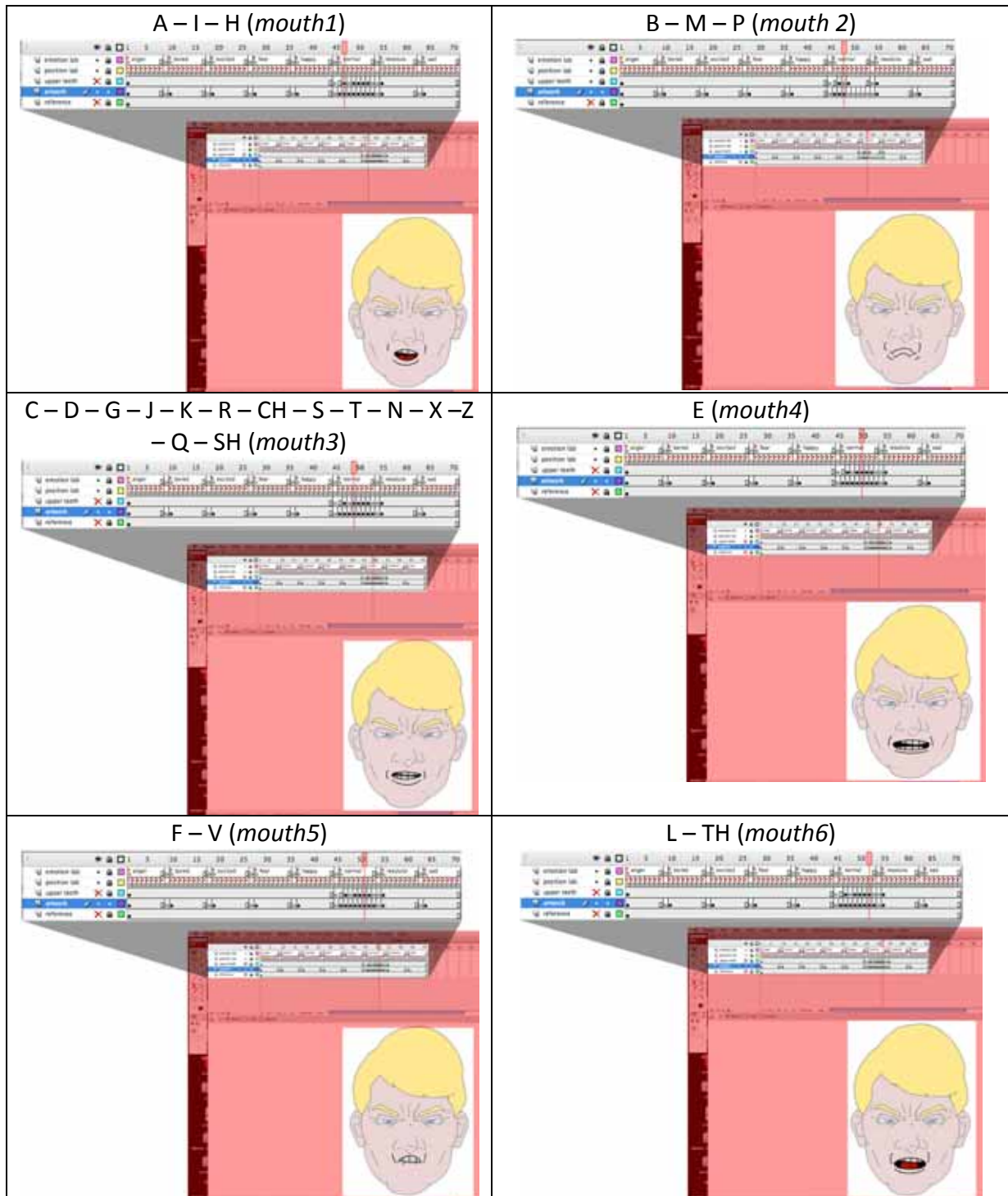
STEP 9: Click on frame 47, corresponding to the *mouth1* position in the *normal* emotion. Erase any part of the teeth that would not show in an open mouth. (Often this works best if you lock the artwork layer first so that you do not erase the upper teeth and artwork at the same time.) Next, add the tongue. The finished art is shown here:

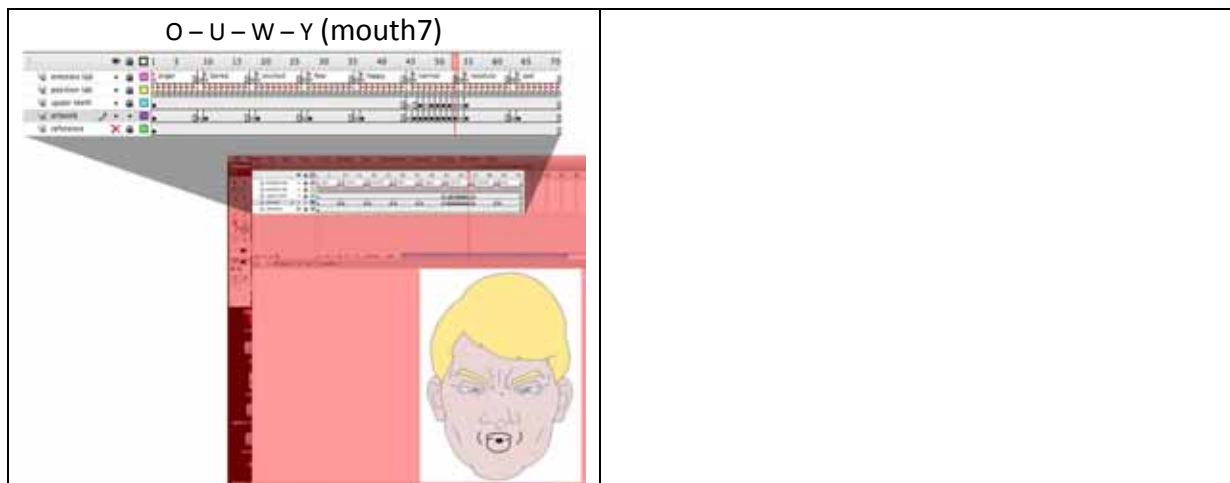


STEP 10: Use the same process to add artwork for all the mouth shapes. Click on the frame aligned under *mouth2* for the *normal* emotion (frame 48) and erase any part of the teeth that would not show in an open mouth corresponding to the mouth shape for the letter “B”. Here are examples of the remaining mouth positions:

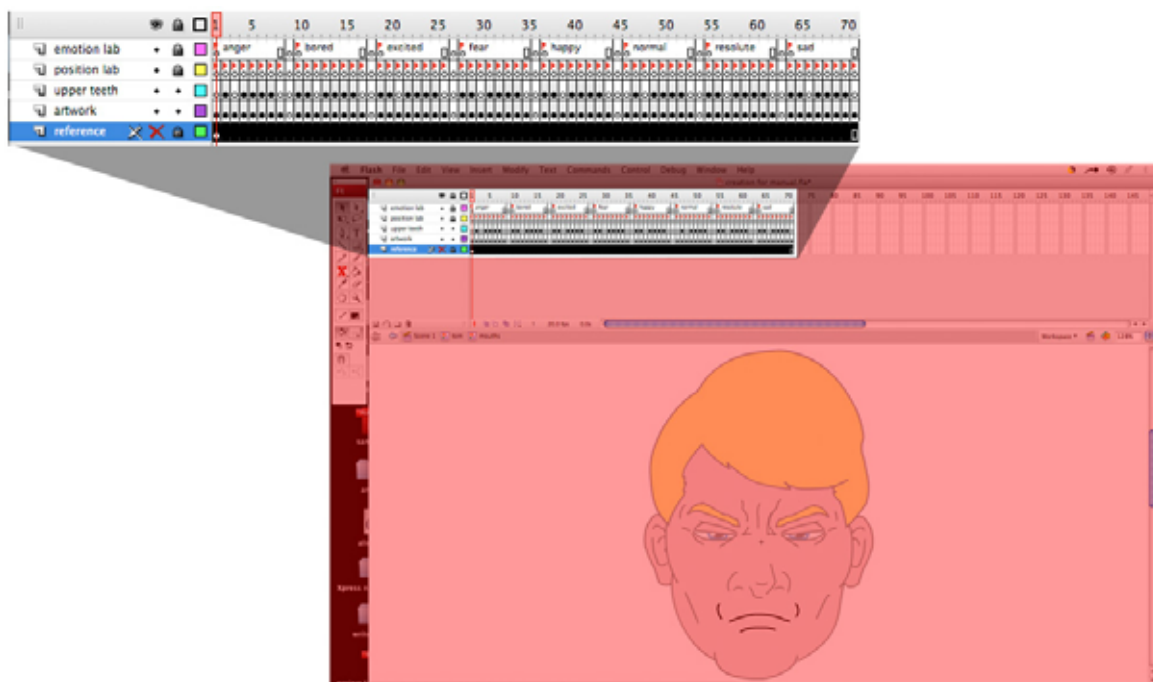


STEP 11: When you have finished, return to the **artwork** layer and finish your custom character's mouths by applying color to the appropriate elements.

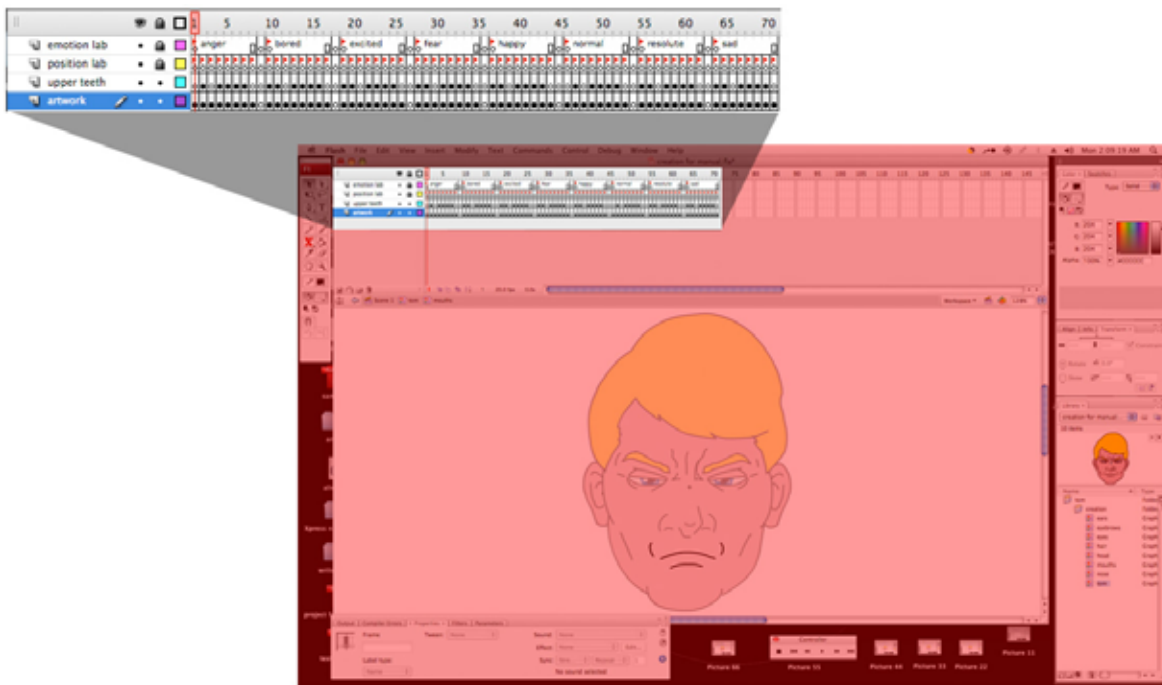




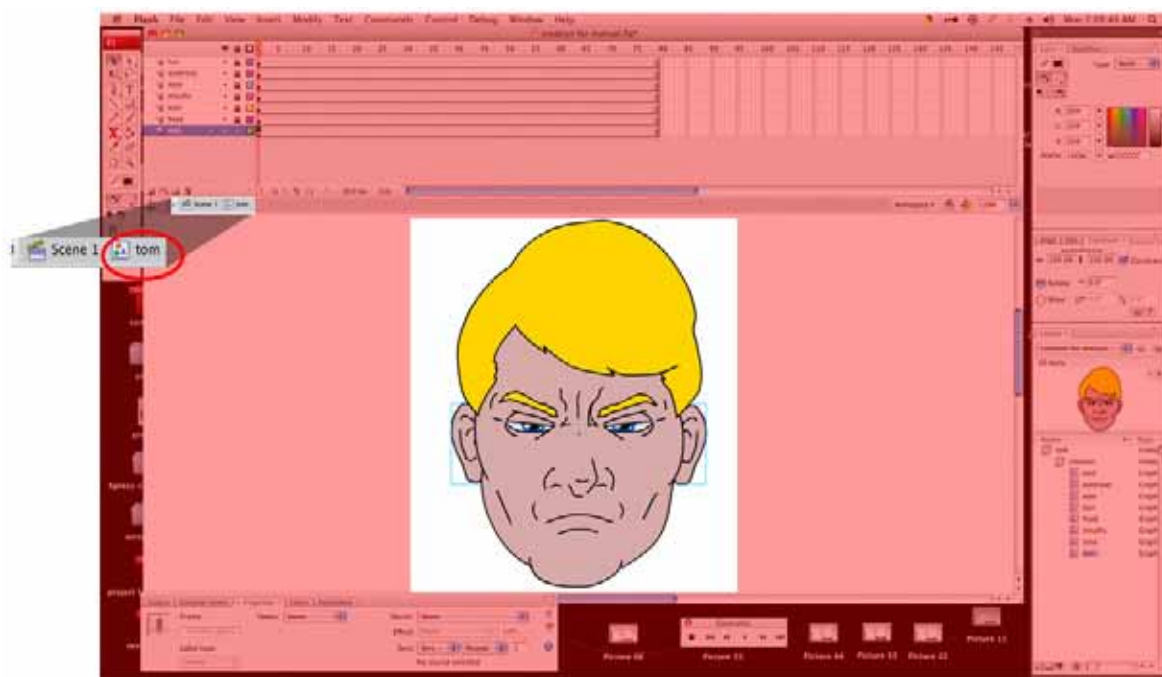
STEP 12: Repeat the same steps for each emotion and mouth position. You should end up with something that looks similar to the timeline in this example:



STEP 13: When you are done, remember to select the **reference** layer and delete it by clicking on the trashcan icon in the Timeline window.

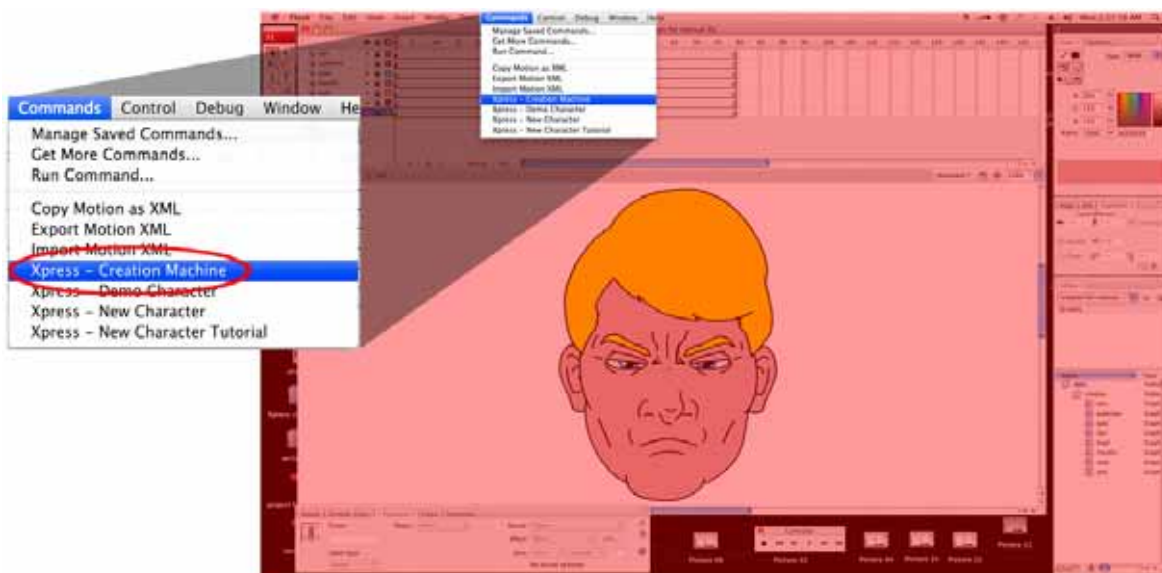
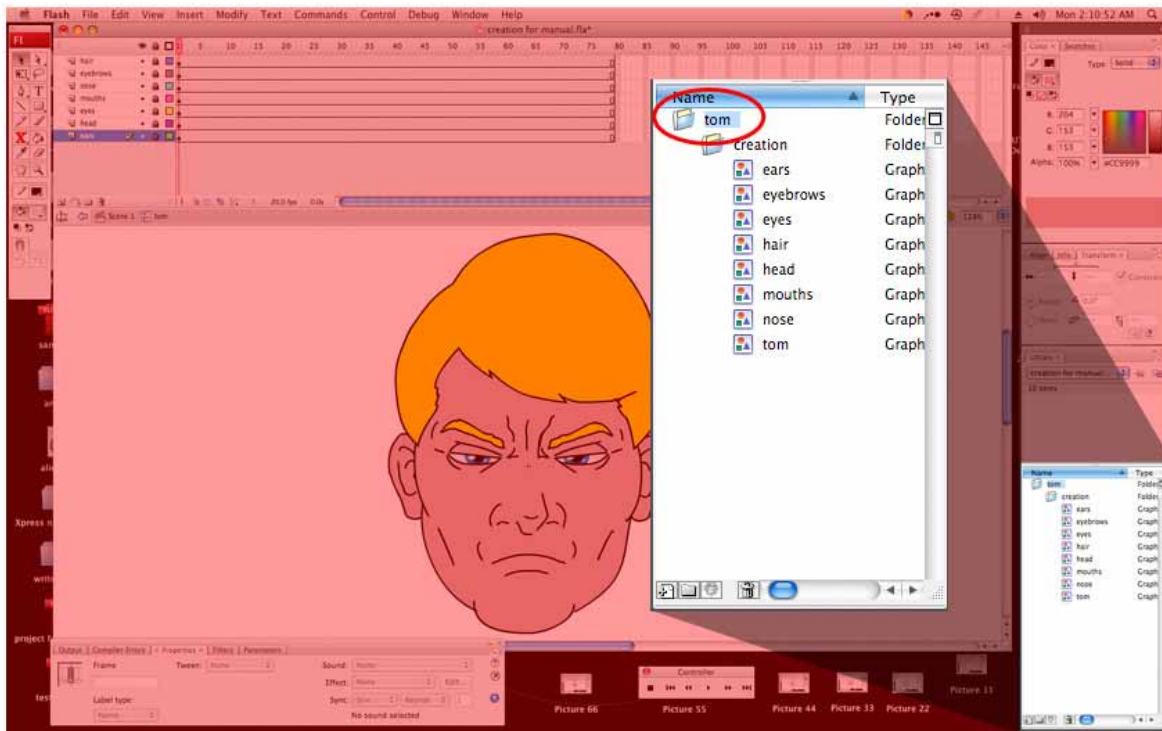


STEP 14: Return once again to the master graphic symbol (the one with your character's name) by selecting it in the stage list. You should see the result of all your finished art: your complete, customized character head.



Your talking head is now complete!

STEP 15: It's time to run the creation machine once again. Select the root folder corresponding to your character's name in the Library. Then choose the menu item **Xpress – Creation Machine** from the **Commands** menu.



Note: It can take up to 10 minutes for the creation machine to complete the conversion of a complex character with all facial elements and all emotions included.

Dividing work between animators and artists

Xpress has been created to function efficiently both for solo artists, as well as for teams of artists and animators. If you are working on animations in a team of two or more people, you will find the following tips helpful in making your production environment run as smoothly as possible.

Artist

The artist begins drawing the artwork for each face part (and *emotion/position* if necessary) as explained in the **Start to Finish** tutorial. This creates the original Flash document with all the requisite drawings stored conveniently in the **creation** folder.

The artist may continue to update and modify the original character artwork at any time using this original Flash document by editing the artwork in the **creation** folder and running the **Xpress – Creation Machine** command. Remember, the creation machine does not require you to have every face part, emotion, or position. It will work with whatever artwork you have created up until that moment.

Animator

The animator begins by duplicating the artist's Flash document. You may want to create a new file for each new audio clip or animation. The animator works on the animation file in the **production** folder.

Eventually the animator will want to update the animation to incorporate the new or modified artwork that the artist has been working on. This process is as simple as importing the **creation** folder assets and running the **Xpress – Creation Machine** command:

STEP 1: Open the Library from the original Flash document by choosing the menu item **File > Import > Open External Library...**

- a. Select the artist's **creation** folder assets from the folder list in the Library panel.
- b. Then drag the items into your own Library window, replacing the existing ones.

STEP 2: Select the root folder with the character's name in the Library window then run the **Xpress – Creation Machine** command. This will update the source assets for your animations and all of the animations for this character will now have the artist's latest artwork.