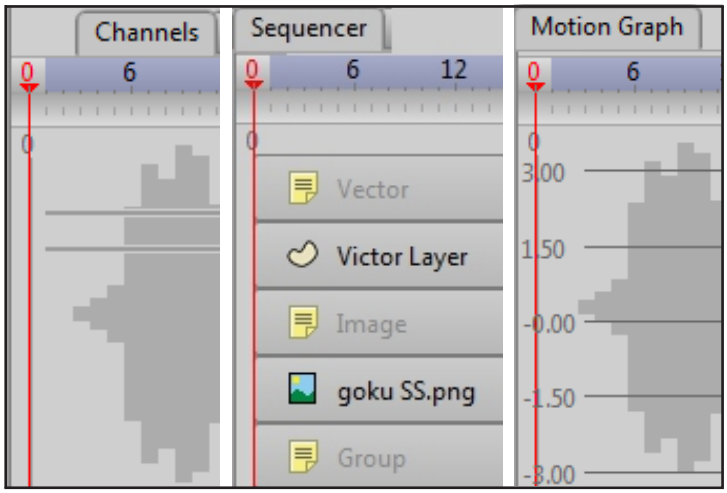
Mapping out Animation

Lesson 4

While the layers provide the ingredients that make up our animation, the timelines set up and map out all the motion we will witness in the movie. The timelines are broken down into frames and seconds, allowing us to gauge when events or keyframes ain the animation. Depending on your needs, there are three different timelines in Anime Studio Pro: Channels, Sequencer, and Motion Graph. We have worked a little bit with the Channels timeline in some of our exercises. This section will expand on that further, so we are clear on how to use all the timelines moving forward.



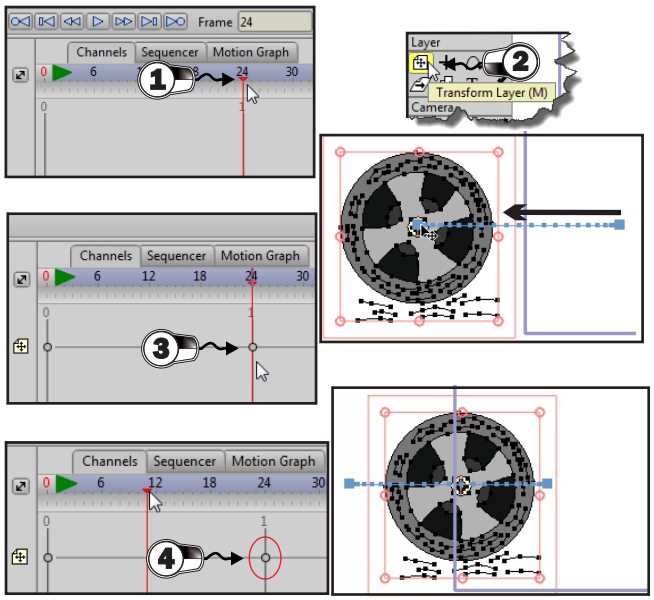
Understanding keyframes

The easiest way to remember the function of a keyframe is that it is a change that occurs on the timeline. Your timeline is made up of individual frames, which are indicated by the numbers you see at the top of the panel. When a keyframe or change is inserted, you will see a circle appear on the selected frame. If you create two keyframes that are 10 frames apart, any movement that occurs between the two points will interpolate, or in other words, automatically move and fill in the movement, saving you time. You witnessed this when we interpolated the Switch layer in the previous section.

To demonstrate this, open up KeyFrameExercise.anme, located in the files that accompany this book.

Perform the following steps on the Tire:

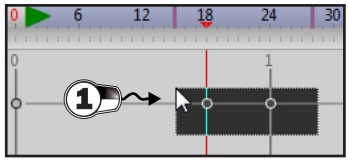
1. Place your timeline scrubber so that it's on frame 24. You can do this by simply clicking on 24.
2. Select the Transform Layer tool, left-click and hold on the oval and drag to the left or the right.
3. When you release the mouse button, you will notice that two dots or keyframes have been placed between frames 0 and 24 on the timeline, as shown in the following screenshot:
4. Click-and-hold on the red scrubber that is above frame 24 and drag back to the beginning of the timeline. This method is called scrubbing and you can see that between the two keyframes that Anime Studio created automatic movement on for the oval.

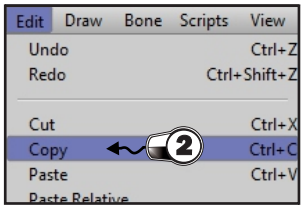


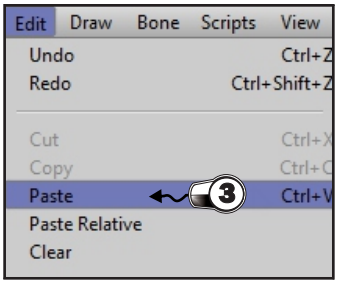
You can use keyframes to interpolate different functions such as size, distance, vector point movement, and more. These functions will become clearer as we move forward. Each layer has its own set of keyframes, which can only be viewed on the layer that is selected in the Layers panel.

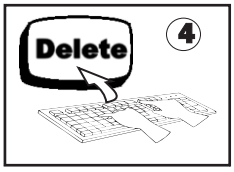
Just like objects and layers, keyframes can be copied, pasted, and deleted in Anime Studio. This can be useful if you want to repeat an action or if you want to get rid of unwanted movements. If you're familiar with Anime Studio 8 or an earlier version, these methods have changed slightly in the newer versions. The steps to copy, paste, and delete keyframes are as follows:

1. To copy a keyframe, simply click on the desired frame (or highlight multiple frames by clicking- and dragging a box around them).
2. Go to Edit | Copy or use the convenient shortcut command Ctrl + C on Windows and command + C on Mac.
3. To paste that keyframe, find the spot on the timeline you want to place it and go to File | Paste (Ctrl + V or command + V).
5. Deleting keyframes work in a similar manner by highlighting and hitting the Delete key on your keyboard.









Just now you altered objects on your canvas using the previously discussed methods. The difference to keep in mind is that if an object and keyframe are both highlighted, the keyframe will take precedence over the object. So if you want to copy, paste, or delete an object, make sure no keyframes are selected.

NOTE...
Just like layers, you can color code keyframes. To do this, simply right-click on a keyframe, choose label, and pick your color.

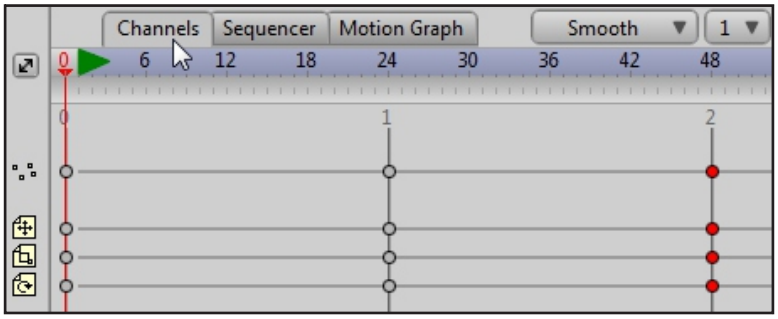
Also, once you highlight a keyframe on one layer, it stays selected even when moving to another layer. This can make things easier when working with multiple layers with various durations.

The Channels timeline

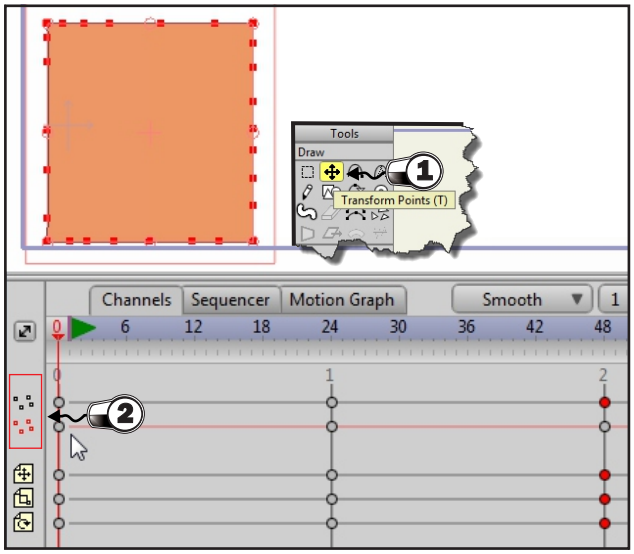
This is what you would consider your main timeline as most of the movements and effects that you create will be done on this tab. To access this timeline, simply click on the Channels tab that appears above your timeline panel. What's most useful about the Channels tab is that it shows you which channels or functions are currently being animated or executed. This means you can easily distinguish which keyframes control object movement, rotation, camera movement, and so on.

To get a better idea of how channels work, let's load up the example file Channels Example.anme located in your book's work files. What we have here is a simple rectangle that has some movement attached to it (you can do much more complex stuff in Anime Studio but it's easier to start with the basics).

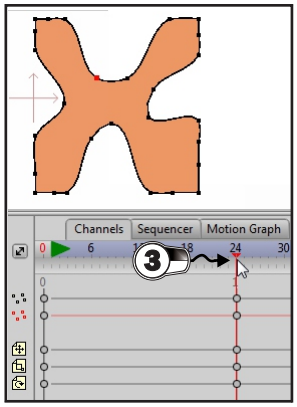
If you look on the Channels timeline, you will see that we have four different channels. The first one looks like four dots, followed by three icons representing different layer transformations, as shown in the next screenshot. If you ever need a reminder of what these channels represent, just move your mouse over the icon and the tooltip will appear indicating its function.



Now, let's have some fun by performing the following steps:



1. The first channel icon shows us the keyframes for the points of the vector graphic. If you take the **Transform Points tool** and click on the rectangle, another channel will appear. This one looks like a group of red dots.
2. The black dots at the top represent all the points on the vector, while the red dots at the bottom indicate the selected frames (if any) you are altering, and notice how new keyframes are created for each channel.
3. Let's move our timeline scrubber to frame 24. With the **Transform Points tool** still selected, grab one of the points on your rectangle and reposition it. Now, notice how a new keyframe has been created for the Points channels on your timeline.



4. If you scrub through, you can see the keyframes interpolate this new keyframe and seamlessly transition the movement from one point to the other. You can move more of the points if you wish or even relocate the timeline scrubber and add more keyframes.

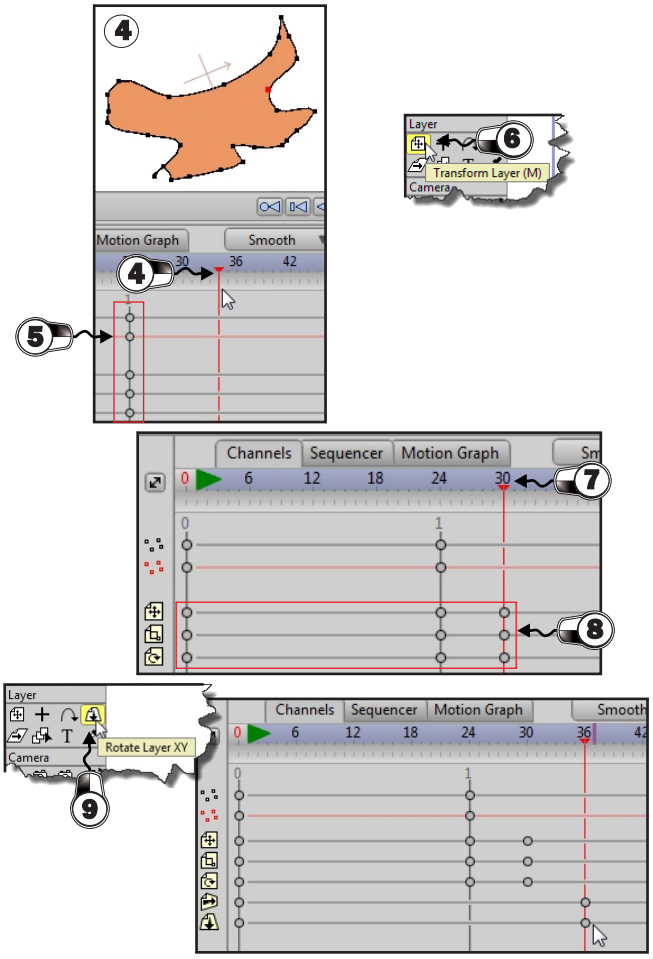
5. For practice, try copying, pasting, or deleting some keyframes. Practicing these functions will enhance your workflow, which is important when working on complex animations.

6. The previous steps also apply for the other channels. Select the Transform Layer tool.

7. Place your scrubber anywhere between the original two keyframes on your timeline.

8. Alter the layer by moving, resizing, or rotating and notice how new keyframes are created for each channel.

9. Select the Rotate layer XY tool, find a place you like on the timeline, and alter the layer. You should now see that two new channels have been created for the x and y properties of the rotation. Creating channels is as easy as altering them.



The Channels timeline is so powerful that you can do all of your animation in this tab and never open Sequencer or Motion Graph. However, it's best not to limit yourself. After this chapter, you will discover how all three timeline types can help you create the ultimate cartoon.

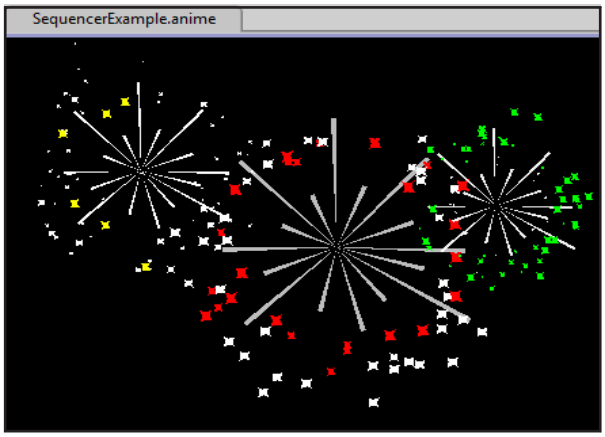
NOTE...

There is an option in the Preferences panel (Edit | Preferences) that allows you to condense the channels to keep a cleaner timeline (which is labeled Consolidate timeline channels). In some ways, this makes working with the timeline harder as you have less control over the channels. We made sure this setting was checked off in Chapter 1, Stepping into the World of Animation, but you can change it if you feel the need.

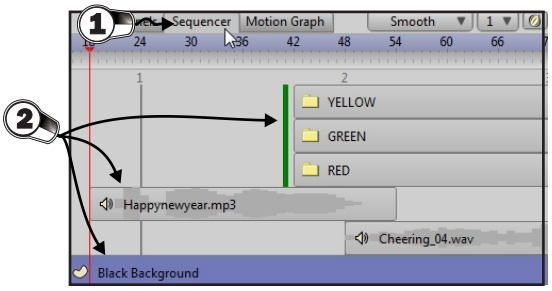
The Sequencer timeline

If you've ever worked with video editing software, you are probably familiar with moving clips around on a timeline to sequence them in a certain order. The Anime Studio Sequencer works similar to this. Let's say you've mapped out some animations for a character. However, after extensive work, you realized the animation happens too soon in the cartoon. Maybe you need the animation to sync up to a certain sound. This is where the Sequencer timeline comes in handy. No need to redo the animation.

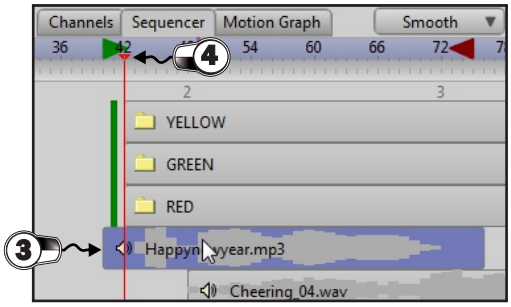
Please open the file SequencerExample.anme, which came with the book's work files. What we have here is an explosion, followed by a sound effect. Ideally, we would like the sound to go off when the explosion does.



1. Let's click on the **Sequencer tab** and see what we can do.



2. With the sequencer now displayed, we should see two items: the Black Background, sound effects, and the explosions(Yellow, Green, Red). Here, we can click-and-drag these items around to rearrange where they begin in the animation, as shown in the following screenshot:



3. Give it a try! Line up the explosions and sound effect (Happy new year) so that they occur at the same time.

4. In this case, we could move the sound effect from frame 1 with the explosion animation or move the explosion up to where the sound effect is. Either that or we could relocate both files to meet somewhere else on the timeline. Whatever the case, the sequencer allows you to easily move these assets around.

Just know that if you move an asset forward, it will still appear in the previous frames, just that it will not be animated until the timeline hits the point where you moved the sequence. To hide an object temporarily or permanently, you will need to access the object's visibility controls in the Layer Settings panel.

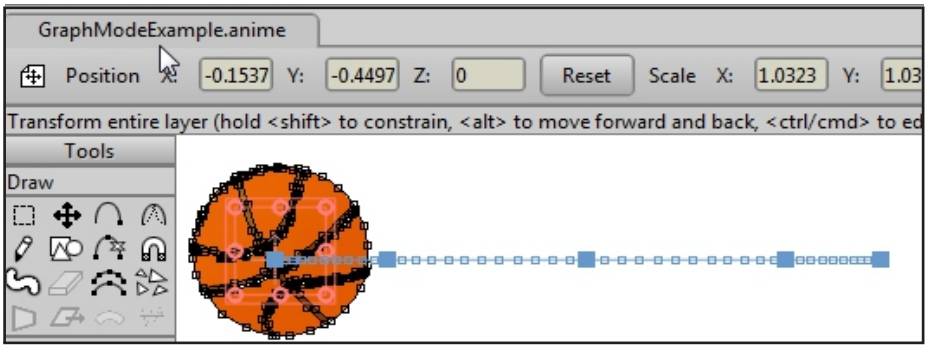
NOTE...

Frame 0 is our work area in Anime Studio. This is where we have access to all the drawing tools as well as the ability to add bones and set up rigs. With Version 10, if you move a sequence to the left, frame 0 can still be accessed. This is an updated feature from previous versions.

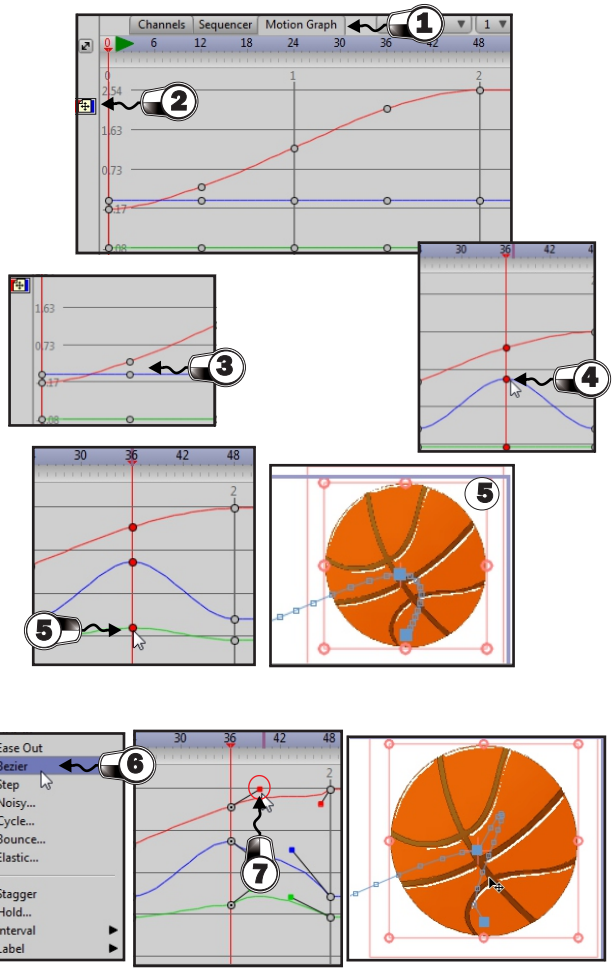
The Motion Graph timeline

The Motion Graph timeline allows us to view the intensity of movement for an object and its layer through a graphical interface. With this, we can alter the lines or paths on the graph to create more complex animations.

Please open up GraphModeExample.anme. What we have here is a simple path of a ball that has several keyframes sprinkled throughout.



The steps to be carried out on the Motion Graph timeline are as follows:



1. Click on the **Motion Graph tab**
2. You will see the **Move Layer** channel on the left of the timeline; double-click on it.
3. You are now in the graph for the Move properties of the layer. You will see three different colored line graphs that you can alter at the keyframes.
4. For this example, the green and blue lines are stuck together, so click on the blue line keyframe of frame 36 and move it up.
5. You'll see that the green line (Z property) is located underneath, plus the path on the canvas has been altered. Try doing this with a few more keyframes to see how the position alters the path of the layer.
6. Right-click on a keyframe and choose **Bezier**. You should now see handles appear around this keyframe.
7. Move the handles around to alter the path even further. This can be useful for creating more complex animations.

The **Motion Graph** timeline is great for those fine tweaks you cannot achieve with the standard Layer tools. Be sure to use it if you're looking to add extra detail to your animated works.

4 Exploring Layers and Timelines

Laboratory Activities

Lab 4.1 Follow Path & Flip
Lab 4.2 Animating Text & Images
Lab 4.3 Enhanced Animation
Lab 4.4 Switching Eyes
Chapter 4 Project 1 What Happen?
Chapter 4 Project 2 Switching Deku
Chapter 4 Project 3 Electro

SWITCHING EYES

Lab Exercise 4.4

Task: Draw each Eyes and Switch
Expected Output File: None
Work File: Face.png & Eyes.png
Video Tutorial: Switch Layer.mp4

Switch Layer

1. Launch the Anime Studio. You may view first the video tutorial.
2. Create a new Animation Studio file.
3. On the Layers panel, create a new image layer with the work file **Face.png** located in Chapter 4.
4. Still on the Layers panel, create a new switch layer and name it "Eyes Switch" then drag Layer 1 under the Eyes Switch layer. Rename Layer 1 to **Open** and click OK.
5. Now create the two remaining vector layers **Close** and **Angry**. You can duplicate the Open layer and then just rename it as shown.
6. Before tracing each eye expression, you need a guide. Add a new image layer for Eyes.png. This image will serve as your guide and it has the three(3) eye expressions that we are going to trace.
7. To start tracing, first select the Eyes.png and adjust the Opacity to 30%. To do this, double-click on the Eyes.png layer then change the Opacity to 30. We adjusted the opacity because we will be tracing each eye expression.
8. Let's start tracing the Open eyes expression. Click now the Open layer then start tracing using the tools below.
   - Transform Points (T)
   - Add Point (A)
   - Curvature (C)
   - Draw Shape (S)
9. You can copy the finished traced layer(Open) to create the next two eye expressions(Angry & Close), but you have to modify and adjust the points to look like the image guide. If you're done try now to test if your Switch layer works. See screenshot.want the layout look like.
10. Save this project file to your folder.