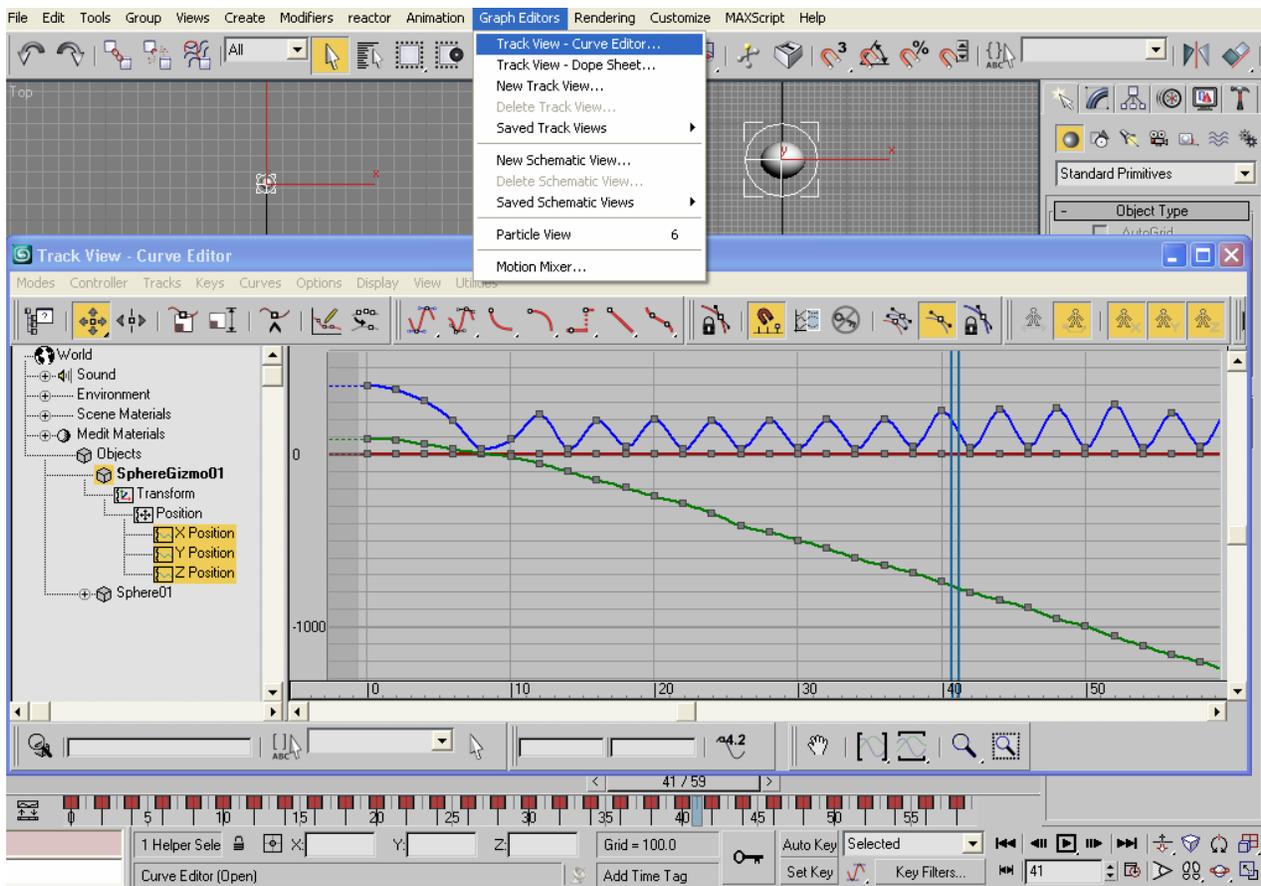


# How to slow down an animation by moving the keyframes

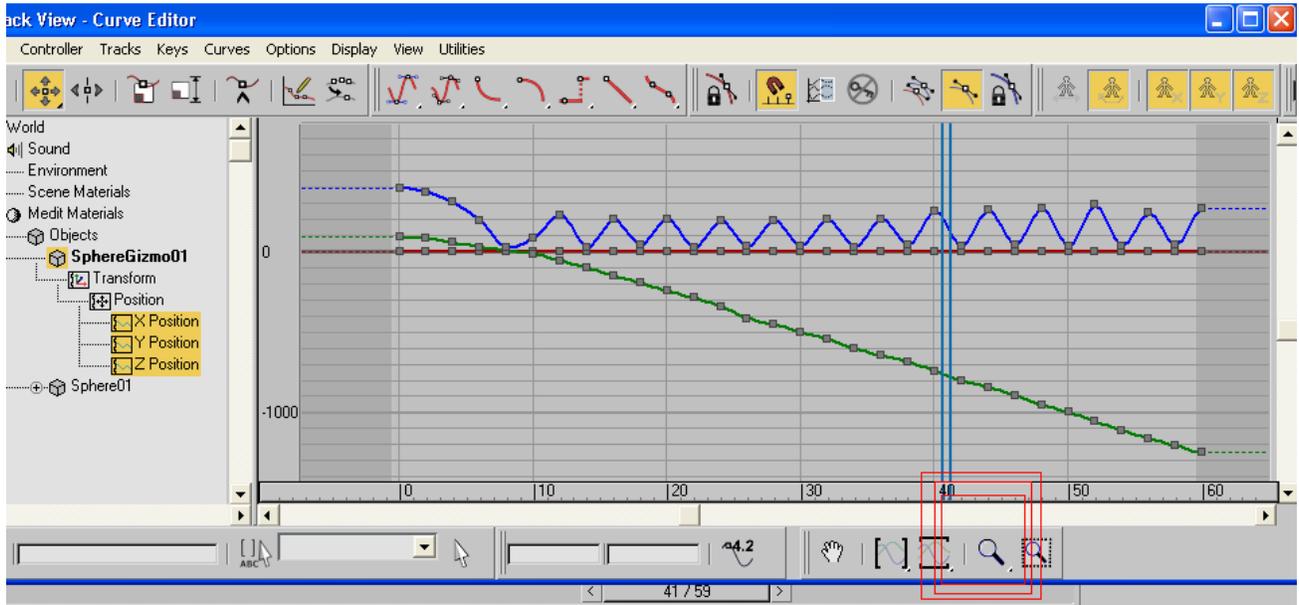
## OBJECTIVE

This tutorial will take you through the steps of slowing down an animation of a simple bouncing ball using the Curve Editor.

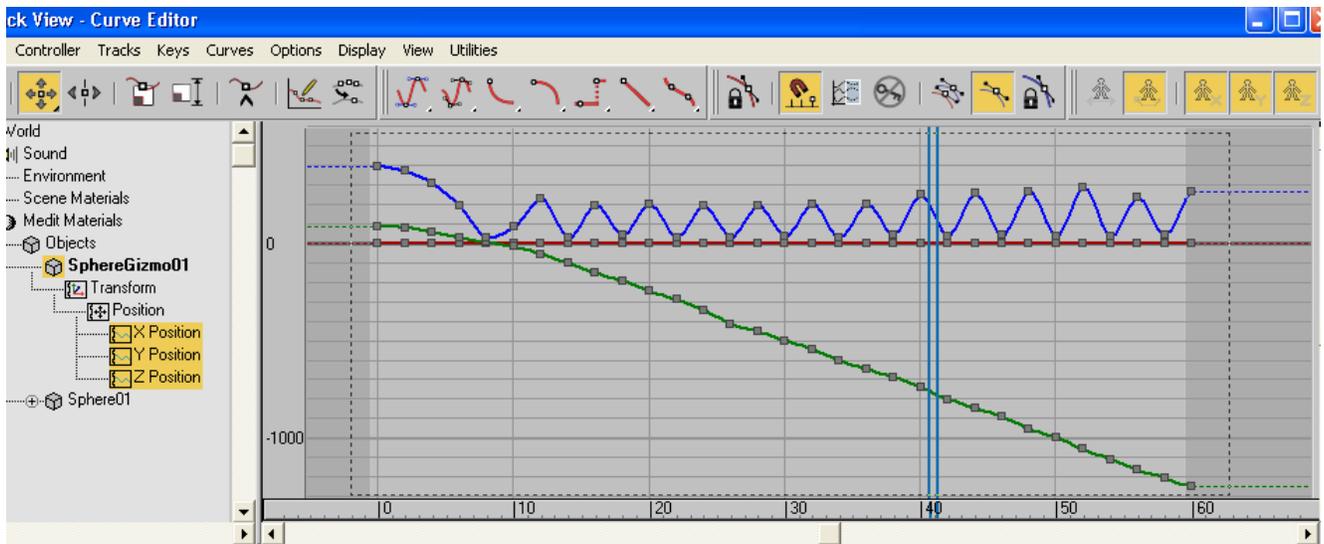
1. **Select the object** that you want to slow down (or speed up). In our example, the bouncing ball is selected.
2. Open the Curve Editor (**Graph Editors – Track View-Curve Editor**)



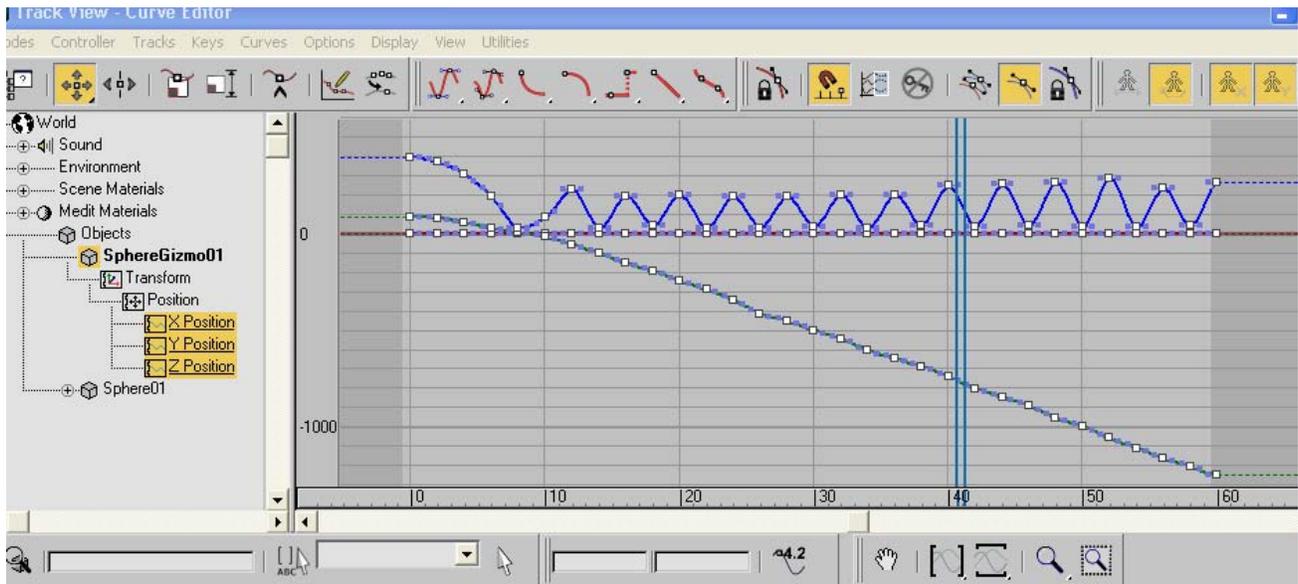
3. On the Curve Editor window, you'll see the keyframes that you've set for this object. The keyframes are represented by little gray squares over the time curve. Notice how the color relates to the axis that you animated.
4. Fit the curves entirely to the window size so that you can see all the keys. To do this, click on the magnifier button at the bottom of the Curve Editor Window and using the Left Mouse button, click and drag. That will zoom in/out to fit the curve to the window size. Note: You can also use the wheel of your mouse if you have that available.



- Next, you will make a selection around the keys that you'll resize. To do this, click and drag a selection as shown below to include all the keys. NOTE: Deselect the magnifier tool if you have it selected before making your selection.



- Once you have your keys selected, you will notice that the gray squares are now highlighted on white.

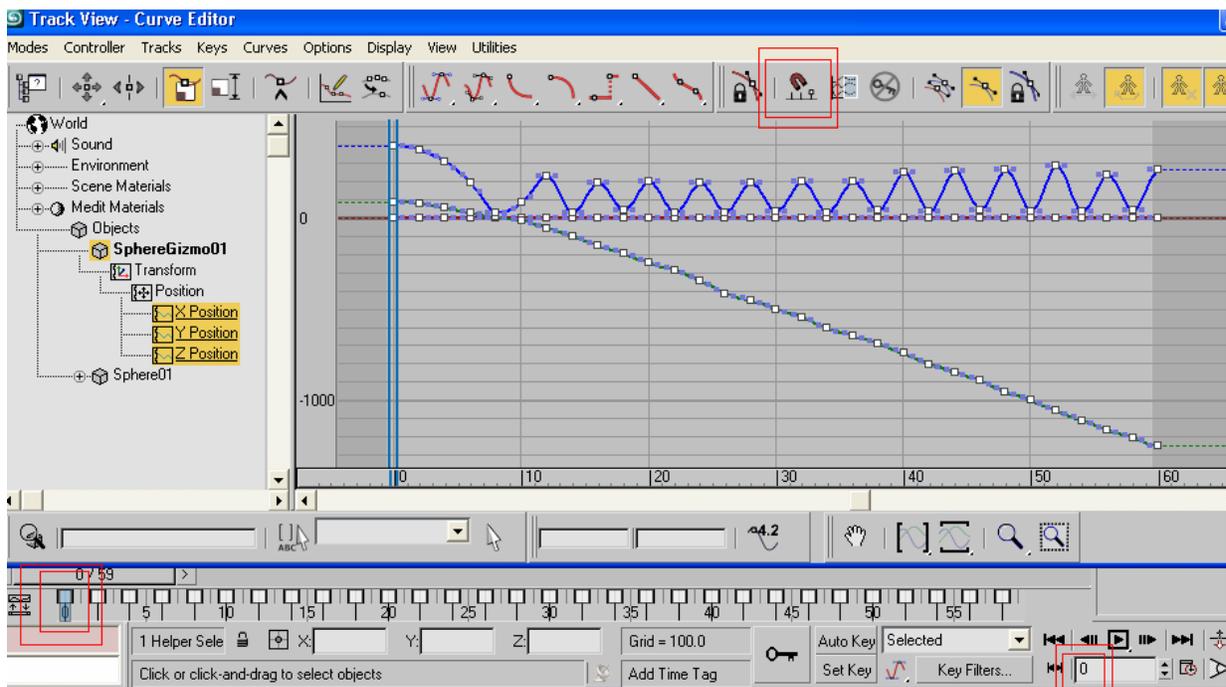


7. To slow down your animation, you will need to make more room between the keys (meaning that they will last longer, slowing down the animation). To do this, go to **Keys- Scale Keys-time**.

**Warning:**

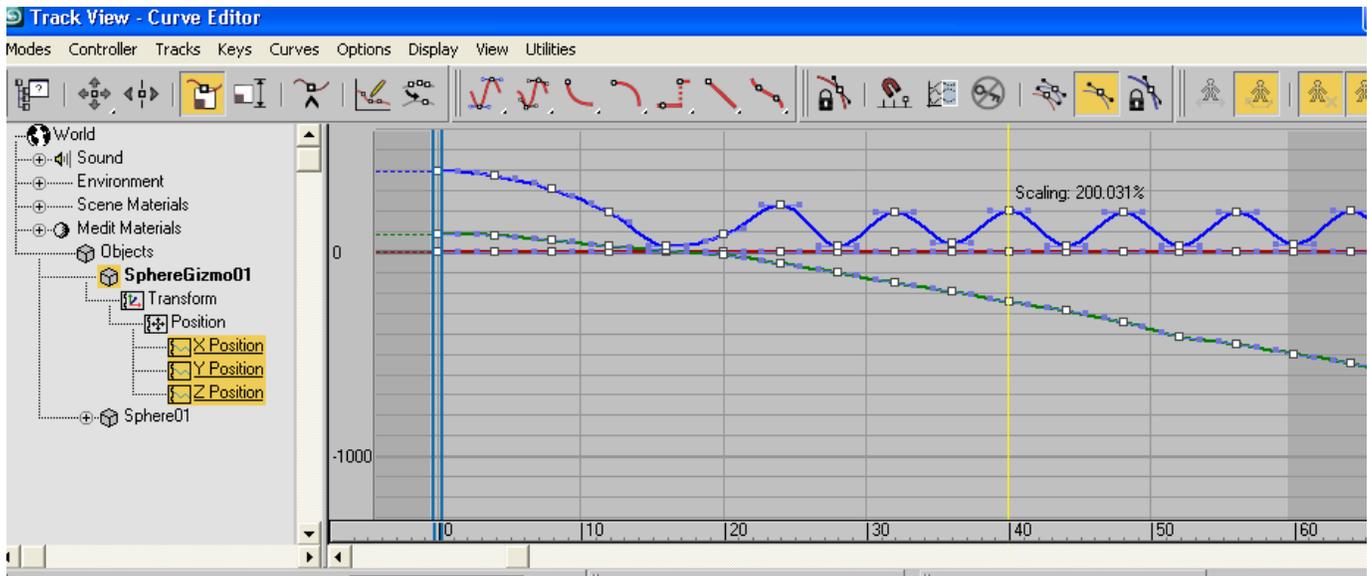
Before you do the next step, verify the following:

- 1) Make sure that the SNAP options are off (highlighted below by the top of the screen). Hint: You can press “S” to turn snapping on and off.
- 2) Make sure that your timeline is on the first keyframe of your animation. In our example, the time head is on frame 0 (at the beginning). This will make the scaling keep frame 0 in the same place while you scale your animation.



8. Click on any of the keys selected and drag to the right to slow down your animation (add more room between the keys) or to the left if you want to speed up your animation (reduce the distance between the keys).

On the example below, the keys were scaled by 200.031%.



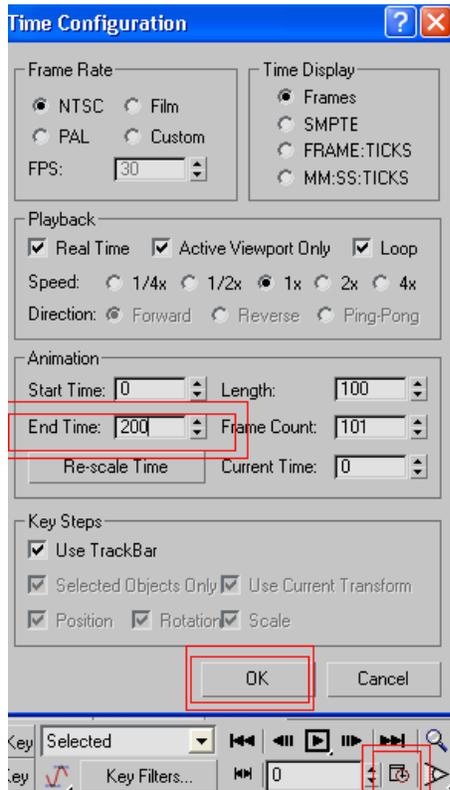
9. Play your animation and see how the speed has decreased.

Note:

If your object has a modifier applied to it, verify that you have the modifier selected on the left window, under Sphere01. You will see the modifier if you click on the “+” sign next to Sphere01. If it’s not highlighted (selected), hold the CTRL key and click on it to select it and add any keys that you might have added to the modifier when you were animating. That way, all keys will be scaled evenly.

10. Adjust the playback settings if needed. Since your animation now will change its length, you might need to adjust the length of the animation playback so that it plays the animation correctly. To adjust these settings, go to the Time Configuration window and set the END TIME to be the last frame of your animation that you want to play.

On the example below, the time has been set to end in frame “200” for playback.



11. Adjust the time for rendering on the render window. To do this, go to **Rendering-Render** or press F10.

On the example below, the time range has been setup to render from frame 0 to 200.

