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The

# Beginner's Guide



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# Animating

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## *The Beginner's Guide to Animating in Daz Studio*

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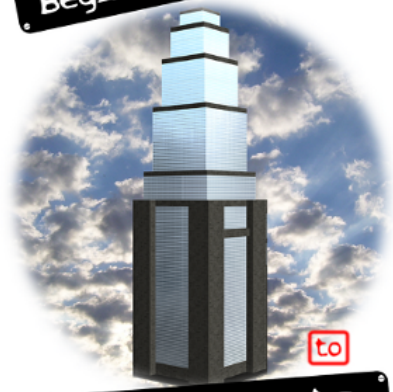
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# *Designed With The Beginner In Mind*

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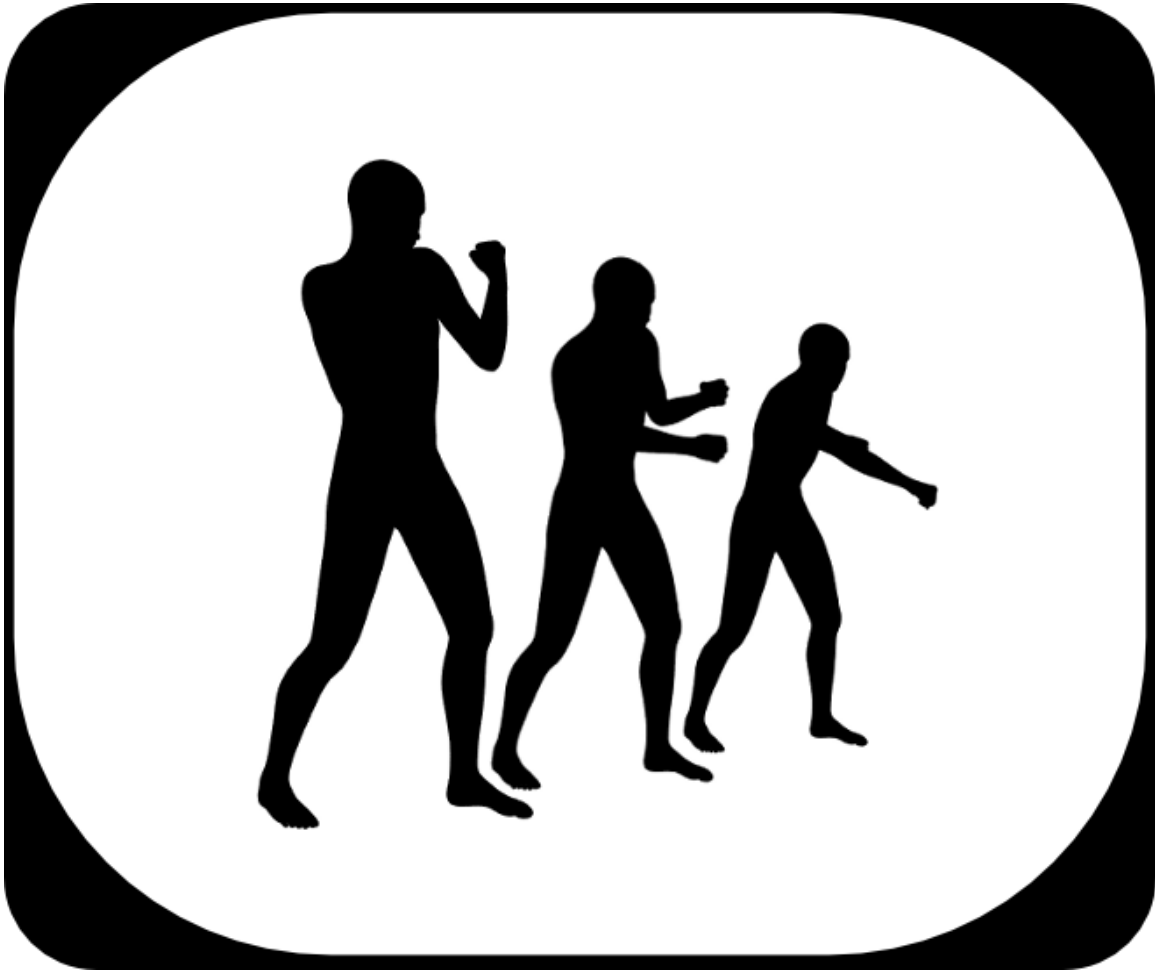
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# Chapter 1: Introduction



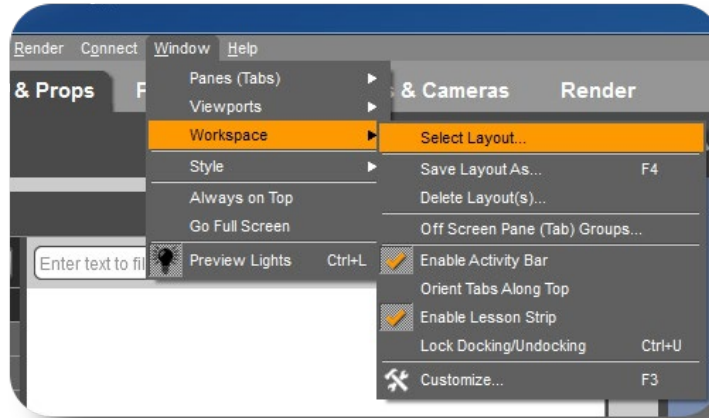
We are going to be talking about animating objects in DAZ Studio. First off we'll talk about the Timeline and all its controls. Then we'll go over animating a single object using this Timeline. Next we'll go over multiple objects being animated and interacting in a scene. Lastly, we'll advance into animating an actual figure.

This guide was developed using DAZ Studio v4.6.3.50 Pro and tested using DS 4.7

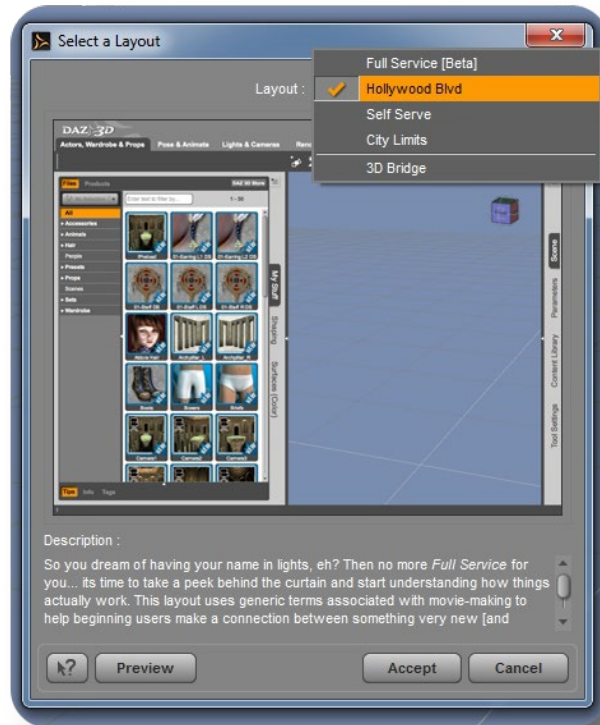




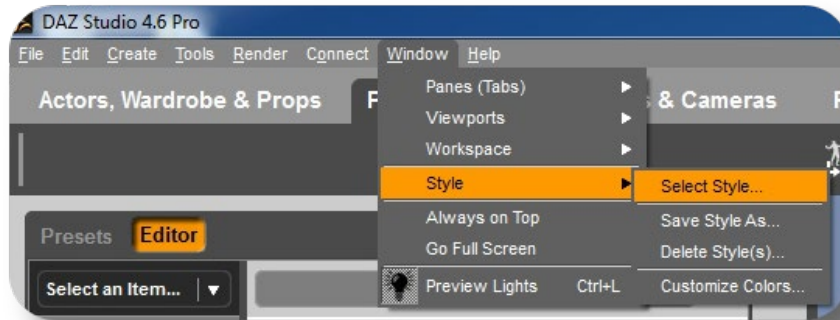
There are multiple layouts that you can use in DAZ Studio. To find them and change your settings, go to **Window->Workspace->Select Layout**.



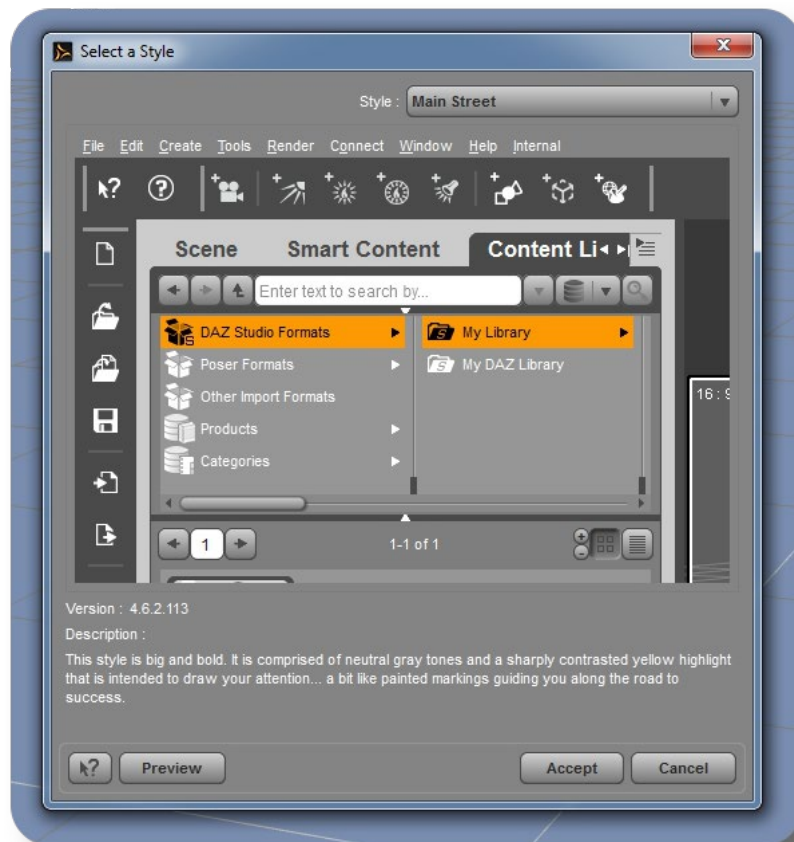
This tutorial will be using the '**Hollywood Blvd**' layout. Choosing the same layout setting will make it much easier to follow along.



In DAZ Studio, there are multiple styles that you can use. To find them and change your settings, go to **Window->Style->Select Style**.

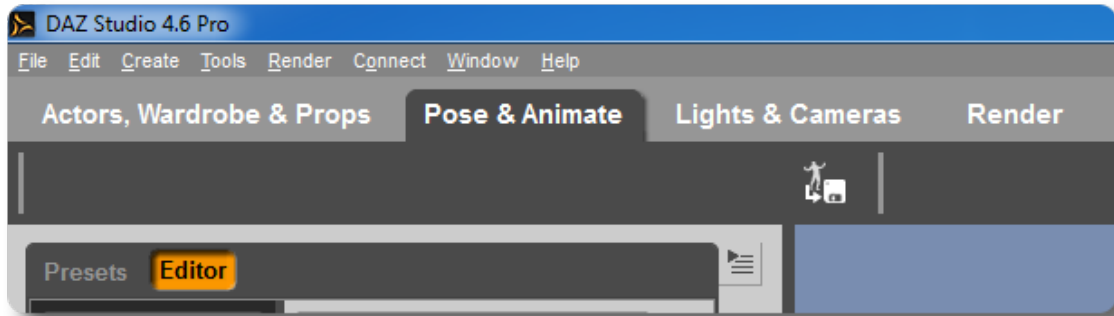


In the style window that will popup, select the '**Main Street**' style, then hit '**Accept**' in order to use the same style that we use in this tutorial.

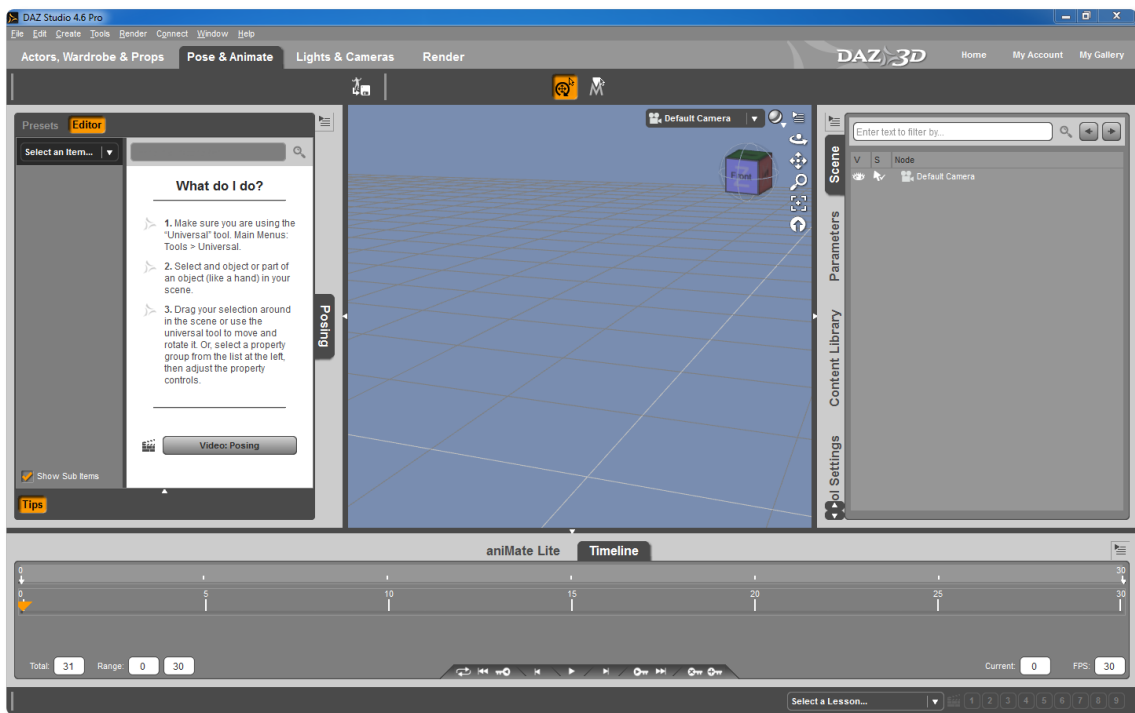




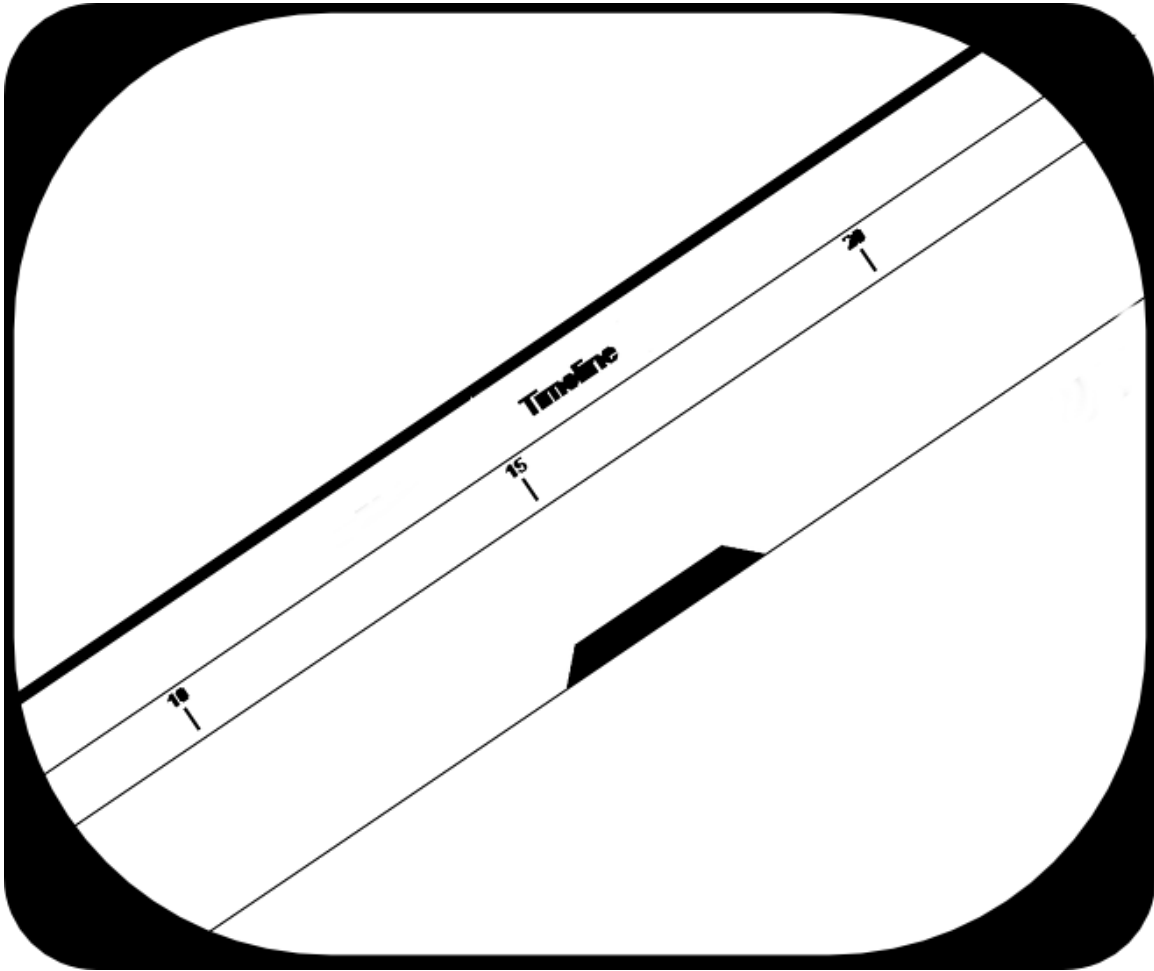
To get started animating, find the **Pose & Animate** tab at the top of DAZ Studio.



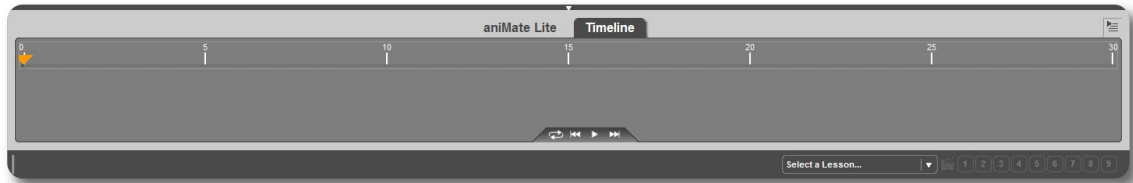
You'll notice once you do this, there will be a bottom window that appears. Make sure that the **Timeline** tab is selected as this is where we'll be starting. If the animation timeline is not visible, click the small upwards pointing arrow tip.



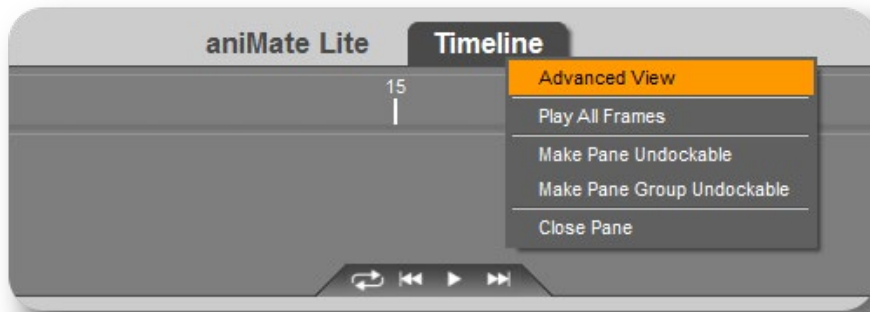
# Chapter 2: The Timeline



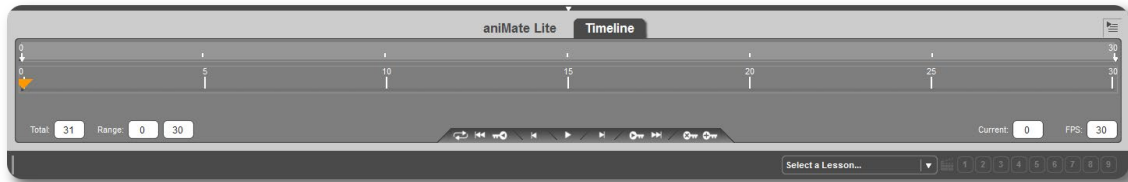
The **Timeline** is where you'll be spending a lot of your time during animation. Learning how to use it is a simple, but essential part of animating in DAZ Studio.



There are two views to our Timeline. We have the **Basic View** which you'll see now. This view gives us minimal information that we'll need, mostly just the basics for watching our animation. Then there is the **Advanced View**. To get to this view just **Right-Click** on the **Timeline** tab, and select **Advanced View**. If your Timeline starts on **Advanced View**, you can skip this step.



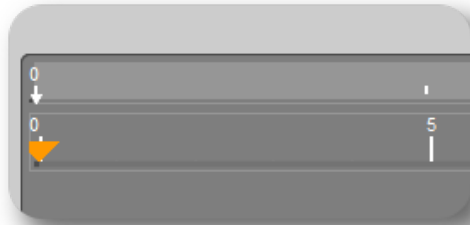
The **Advanced View** gives us more controls and information than the **Basic View**.



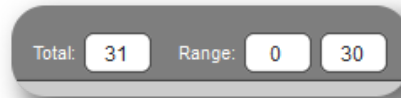
These are the control buttons for the **Timeline** which allow you to adjust the playhead and add/delete keyframes. We'll cover these in detail shortly.



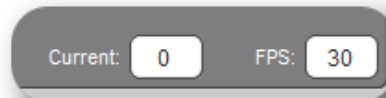
In the **Advanced View**, the time measuring gauge actually consists of two number lines with the bottom being the actual **Timeline** and the top being a **Range** for the **Timeline**.



On the bottom left, the advanced view displays the **Total** amount of frames in the Timeline as well as the current **Range** of frames used.



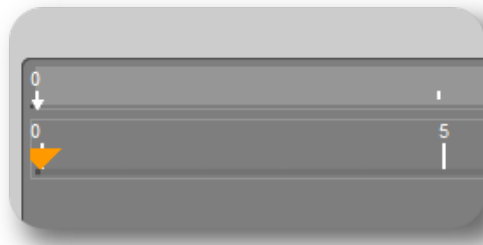
And finally it gives us information on the current frame you are on (viewing) and the **FPS** (frames per second) speed of the **Timeline**. The higher the value of **FPS**, the faster the animation plays, since it has to fit more frames in each second. The default speed is **30 FPS**.



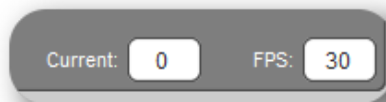
# Frames

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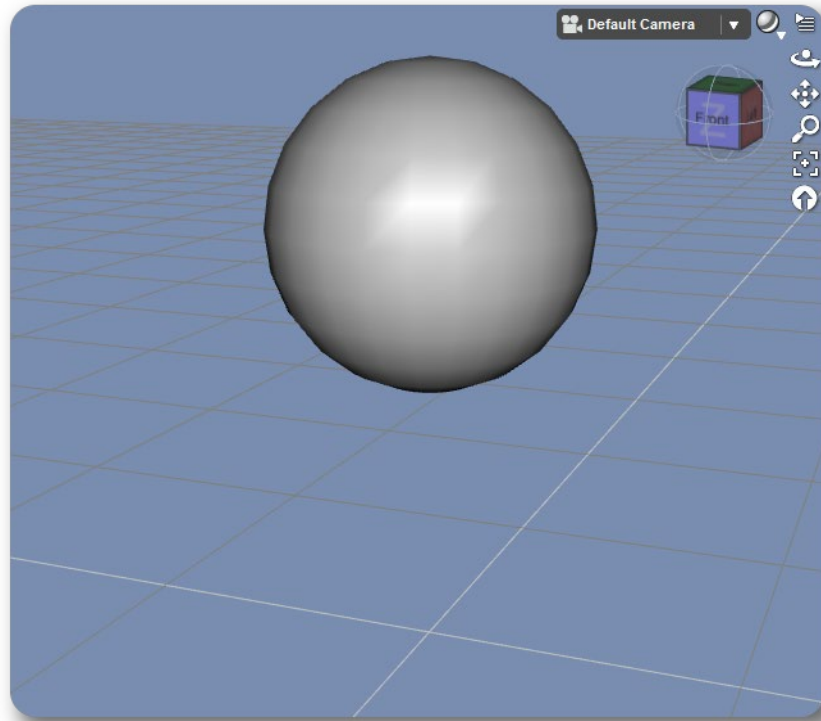
**Frames** are single instances (renders) of an animation at a given point in time. Initially the current **Frame** starts on 0 with the current frame being indicated by the **Orange triangle** on the Timeline.



The current frame can also be seen next to the label '**Current:**' in **Advanced View**.

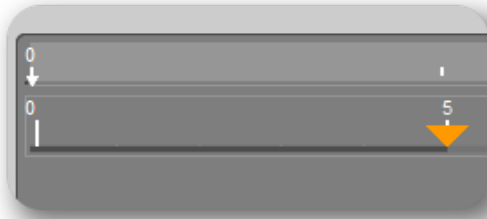


Let's say we have an animation of a **Sphere** dropping down to the ground in five frames starting on **Frame 0** and ending on **Frame 5**. If we look at the viewport, we can see that our **Sphere** at **Frame 0** is at the very top of its animation.

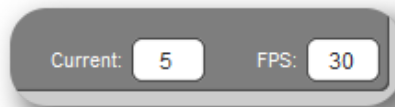




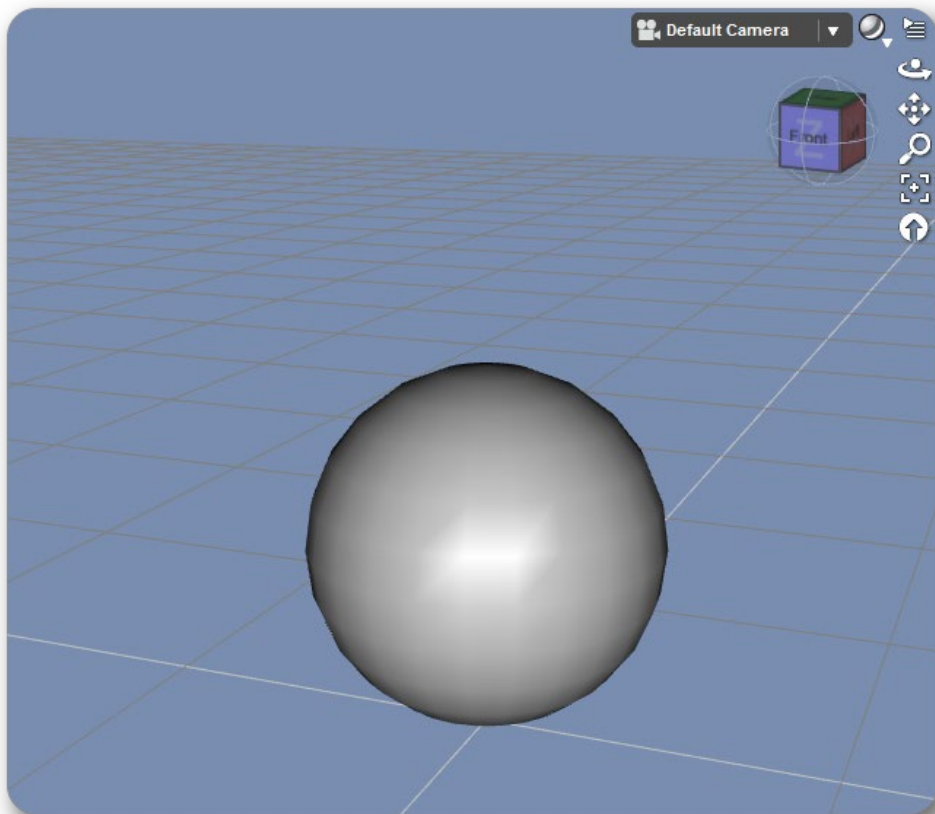
You can left-click on the **Timeline** to change the current frame. I changed the current frame to the end of the animation which is located at **Frame 5**.



You can also type **5** into the textbox next to '**Current:**'.

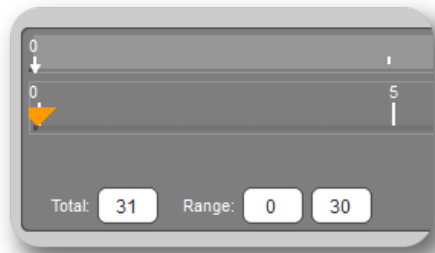


At **Frame 5**, the last frame of our animation, you can see that the **Sphere** is now at the very bottom of it's animation.



# Range

**Range** indicates the range of our **Timeline**. Currently the **Range** is 0 to 30 meaning we can see **Frame 0** up to **Frame 30** on our **Timeline**, a total of 31 Frames (as shown in the '**Total:**' field).

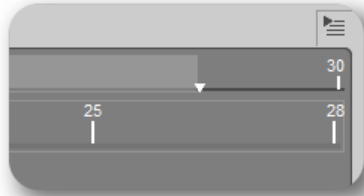


**NOTE:** When the Range minimum and maximum pointers are located on the number line just below a hash mark representing the 5-count of frames, they may appear to be a downward pointing arrow but are not.

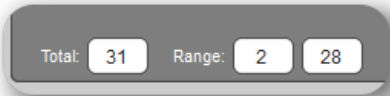
To change the **Range** you can left-click and drag the tiny downward pointing white triangle. There are two of them, one on the left-side and one on the right side of the **Range** number line. I moved the left (lower) range to the value of 2. Now the lowest **Frame** we can view on our Timeline is **Frame 2**.



You can also change the upper range by dragging the downward pointing white triangle found on the right side of the **Range** number line. I changed the upper range to a value of 28.



Now the **Range** is **Frame 2** to **Frame 28**. These values can be typed into the textboxes instead of using the **Range** number line. Notice however that even though we changed the **Range**, we still have a total of 31 Frames. They are still there, but as of now the Timeline only cares about the **Frames** within the current **Range**.

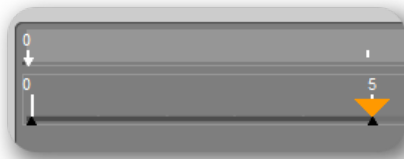


# Keyframes

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**Keyframes** are the meat of the **Timeline**. As assumed by their names, keyframes indicate the important or “key” frames in the **Timeline**. Keyframes are denoted by black upward-pointing triangles on the **Timeline**.

Let's go back to the first animation example with the **Sphere**. You can see the 2 keyframes in the **Timeline** at **Frame 0** and **Frame 5**. These 2 keyframes make up the entire animation for the **Sphere**.



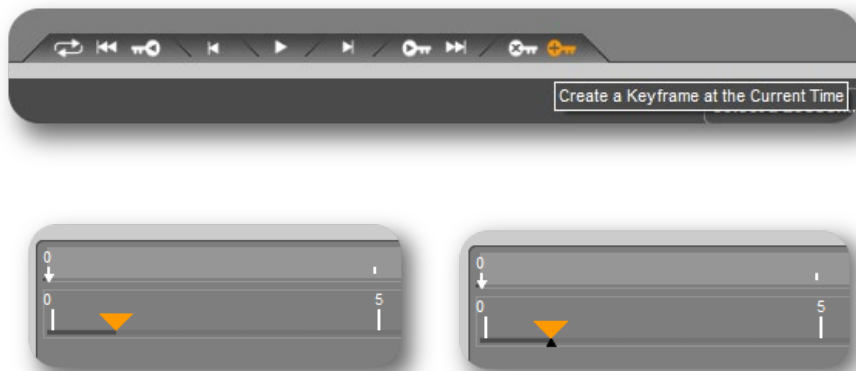
We're now ready to start talking about the **Timeline** controls.



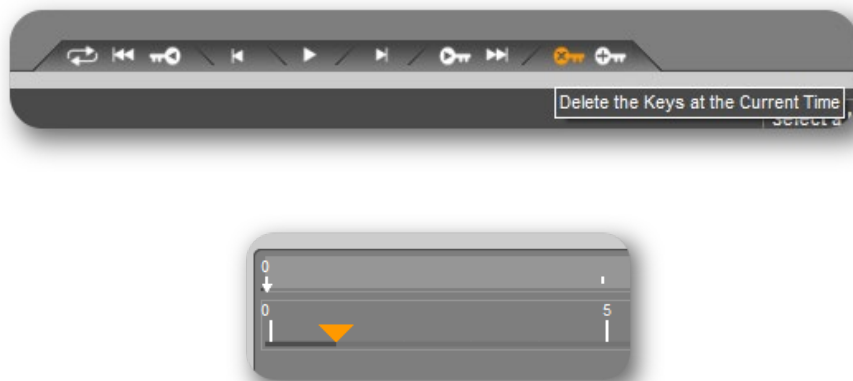
# Keyframe Controls

Since we just finished talking about keyframes, let's get right into the **Keyframe Controls**. Each keyframe control is easy to recognize because they are shaped like keys.

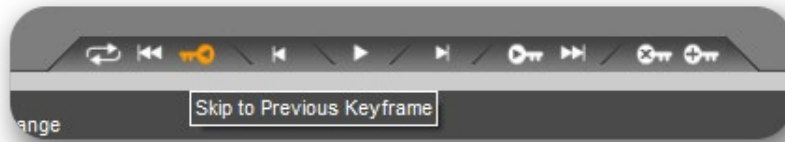
The **Create Keys** control with a “plus” sign creates a keyframe at the **Current Frame**. If our current frame is on **Frame 1**, we can click the *Create Key* control to place a keyframe at the **Frame 1** position.



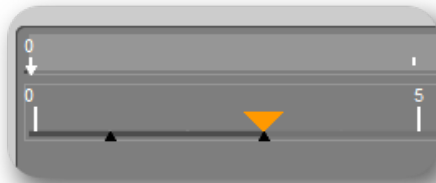
If instead we want to delete a keyframe at the **Current Frame**, we use the **Delete Keys** control with the “x” sign in it. We can then click the *Delete Keys* control to delete the keyframe on **Frame 1**, removing the keyframe we just created.



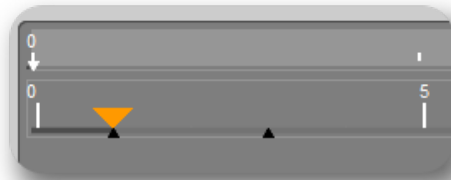
The **Previous Keyframe** control sets the **Current Frame** to the first keyframe it finds behind the frame you are currently on in the timeline.



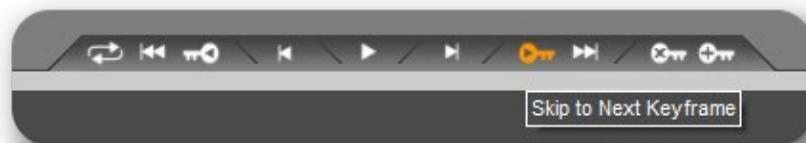
Let's say we have 2 keyframes at **Frame 1** and **3** and our current frame is **Frame 3**.



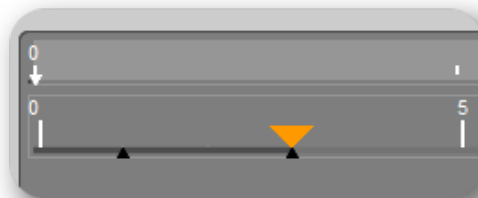
If we click the *Previous Keyframe* control, it jumps our current frame to **Frame 1**.



The **Next Keyframe** control sets the **Current Frame** to the first keyframe it finds after the current frame you are on.



If we clicked the *Next Keyframe* control, it will jump to **Frame 3** again.



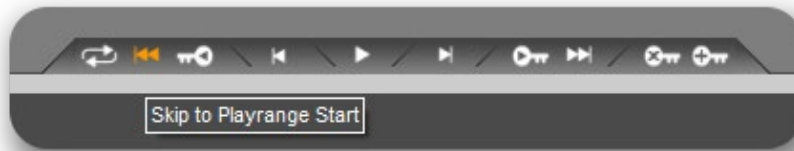


# Playhead Controls

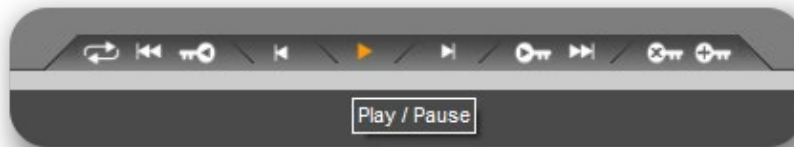
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The playhead is the frame where the animation will start playing when you hit the **Play** button. The playhead is essentially the same as the **Current Frame**.

The **Skip To Start** button changes the current frame to the starting frame of the visible playrange.



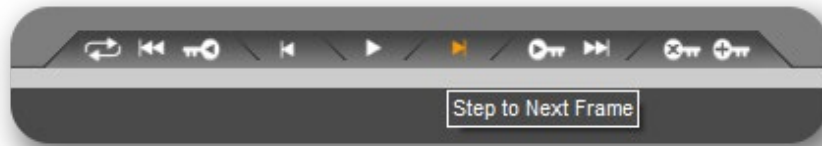
The **Play / Pause** button plays the animation starting at the current frame.



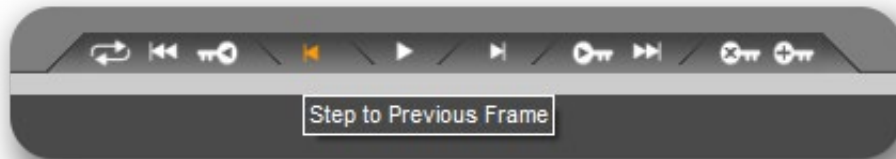
You can press it again to pause or stop the animation.



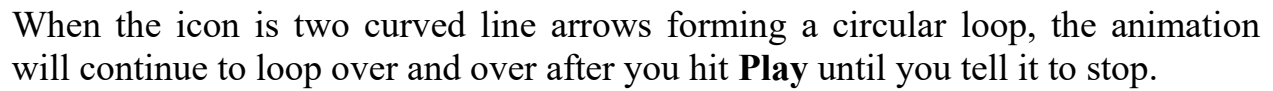
You can use the **Next Frame** button to move to the frame immediately after the current frame.



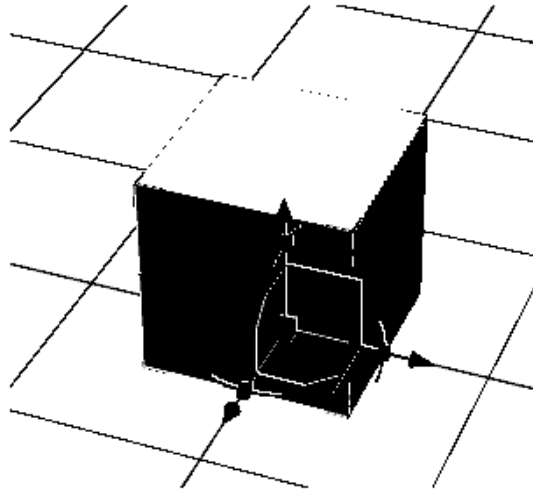
Use the **Previous Frame** button to move to the frame immediately before the current frame.



When the icon is two straight lined arrows pointing left and right, looping is off.



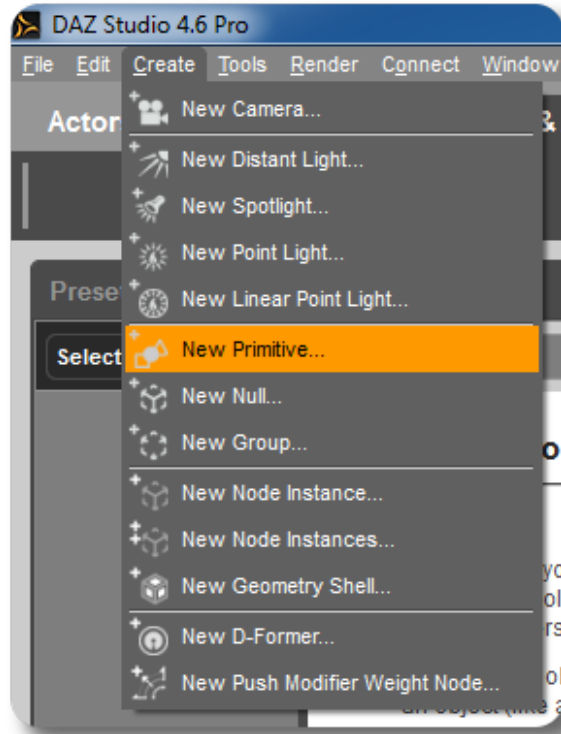
# Chapter 3: Basic Animating



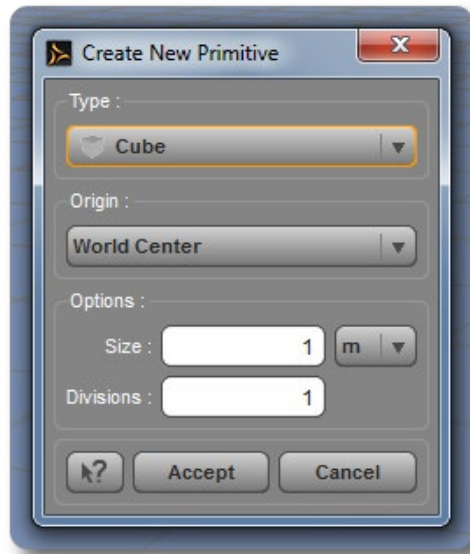
Now we're ready to actually get to animating.

Let's start with a New Scene to add a primitive shape to.

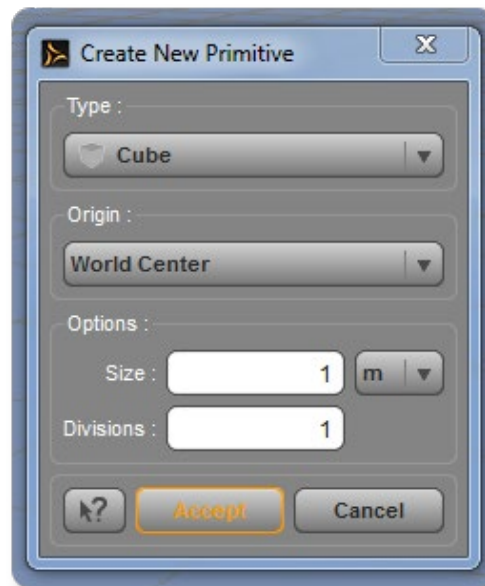
On main menu, go to **Create->New Primitive...**



Select the **Cube** in the drop-down menu using Size **1 m** and Divisions **1**.

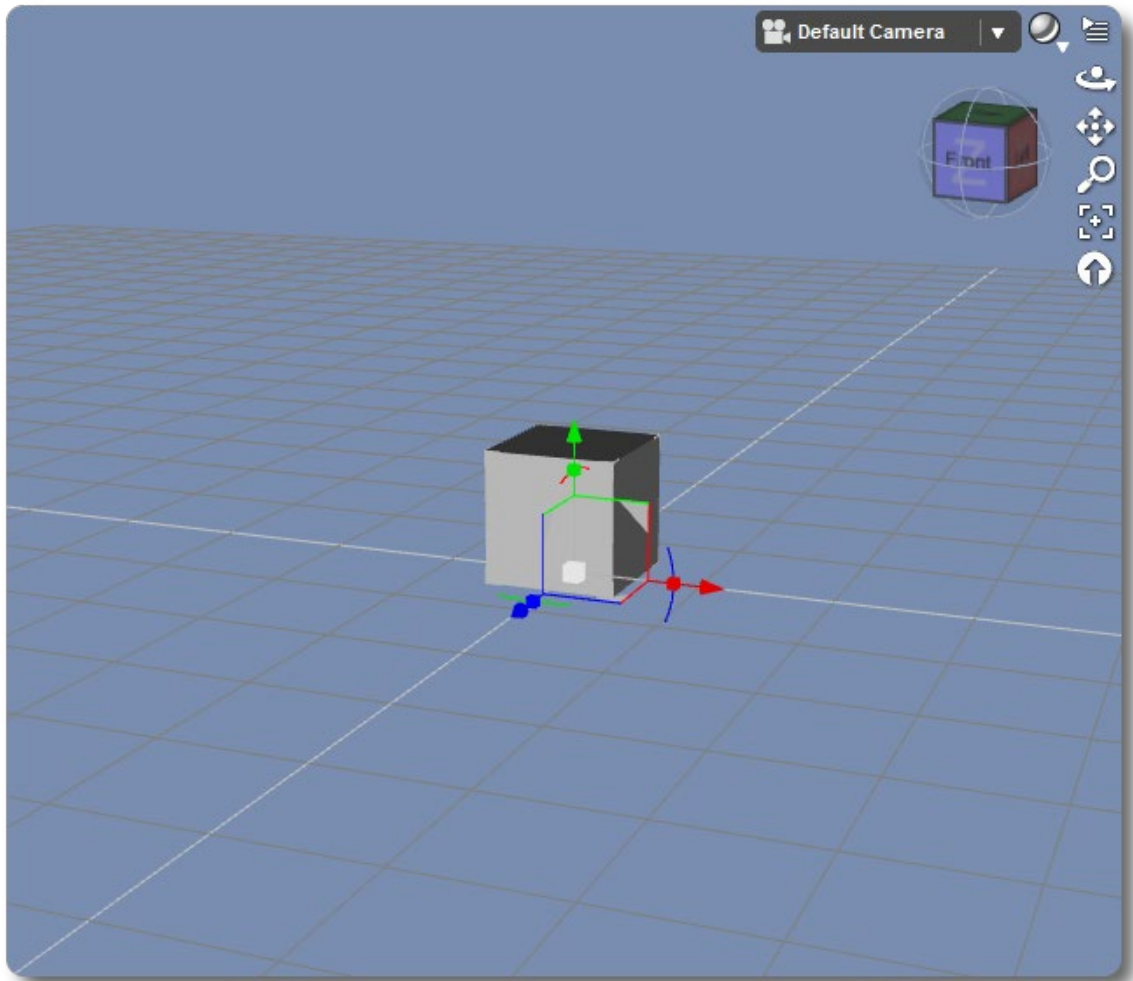


Then hit '**Accept**' to create the Cube.



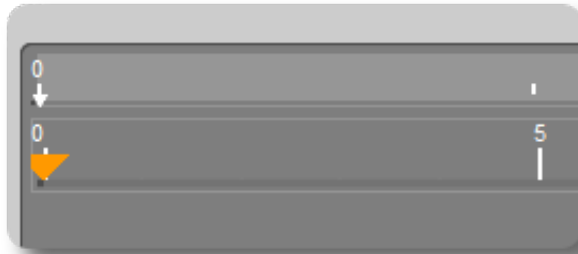


Now you'll have a new **Cube** primitive to play with. In the Scene tab, make sure you select your **Cube**.



**NOTE:** Changes to the Default Camera are also recorded in your animation timeline so be sure to position your view of the scene in the viewport before starting to mark keyframes and make changes to the scene.

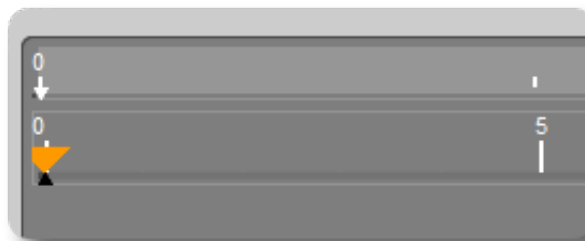
Now the first thing to remember to do, whenever you plan on animating, is to create your base keyframe. This keyframe is your initial starting point for the animation. If your timeline is not already there, go to **Frame 0**.



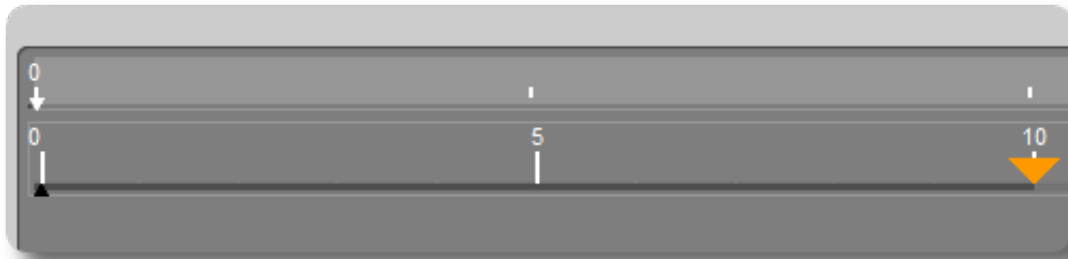
Then hit the 'Create Keys' icon.



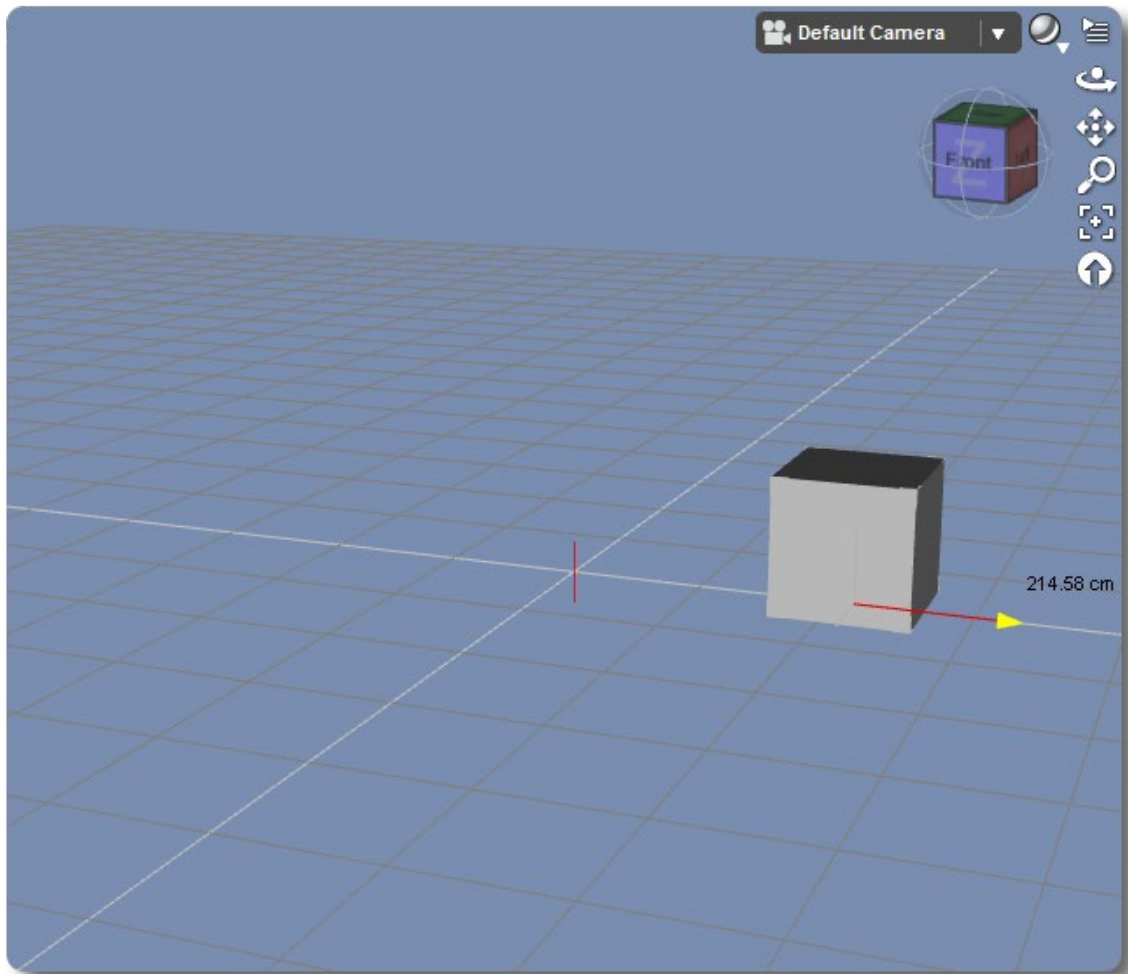
You'll now have an initial keyframe where your **Cube** will start when animating it.



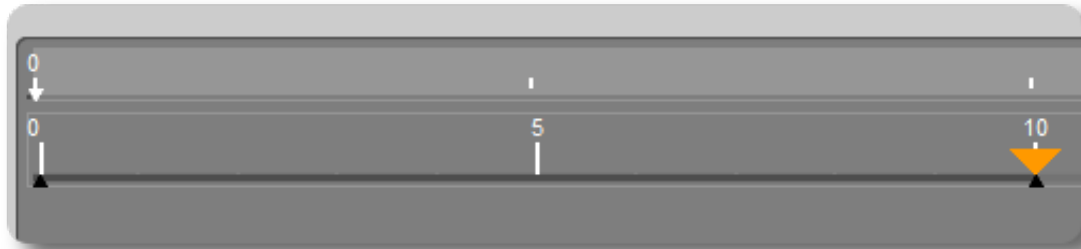
With our base keyframe set, we can get to animating. Go to **Frame 10**.



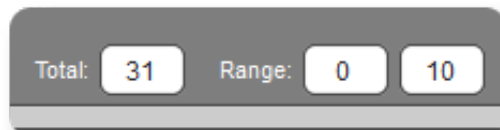
Once on **Frame 10**, move your cube along the **X-Axis** a good amount. You can do this either in the Viewport with the transform handles or in the Parameters tab.



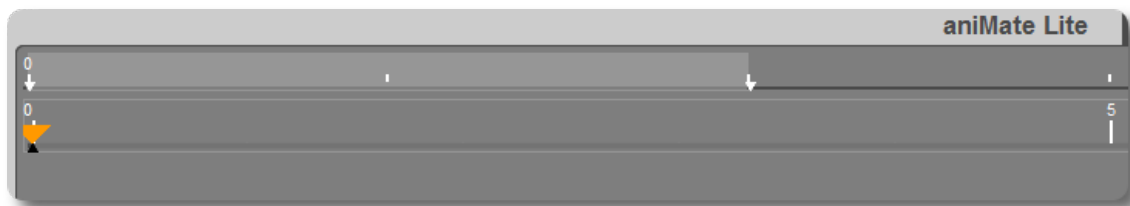
You'll notice that when you move the **Cube**, a new keyframe will appear automatically on the timeline at the current frame.



Now you have an ANIMATION! Not much to it, yes, but nonetheless an animation. Go ahead and change the **Range** to **0 to 10**. This will allow us to play the animation we just made without seeing any empty frames.



You'll see your Timeline change a bit, showing only **Frame 0 to Frame 10**.



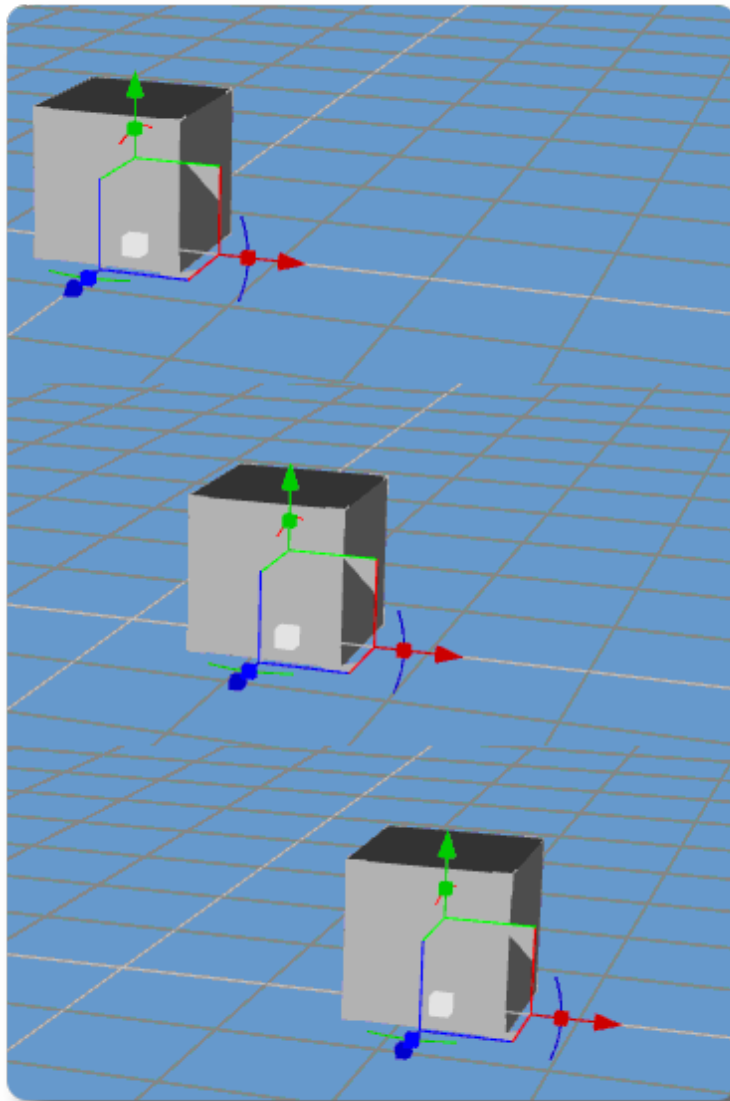
Now **Play** the animation. Make sure **Loop** is enabled since it will go by quick.



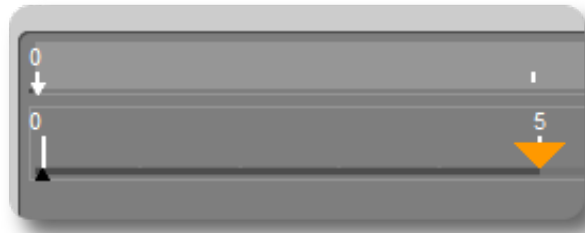
# Fluid Animations

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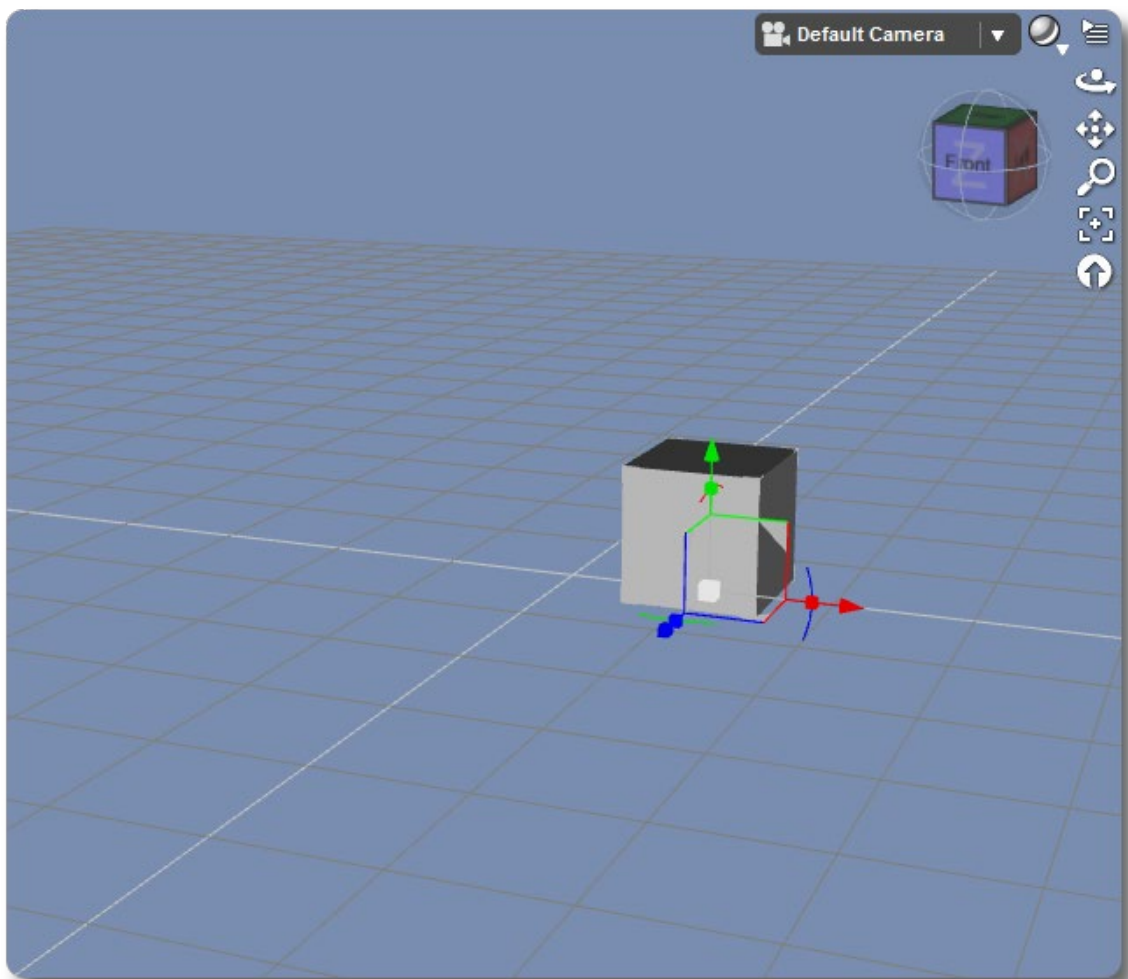
Notice that although we only made 2 keyframes with 2 locations for our **Cube**, we still get a smooth animation. This is because the software takes both keyframes we created, and fills in the empty frames that are between them in an attempt to create a fluid animation. Therefore our frames **1 to 9** have been automatically filled with information for us. YAY! This means less work for us (at least for now).



You can see more specifically if you go to **Frame 5**, the middle of our animation.

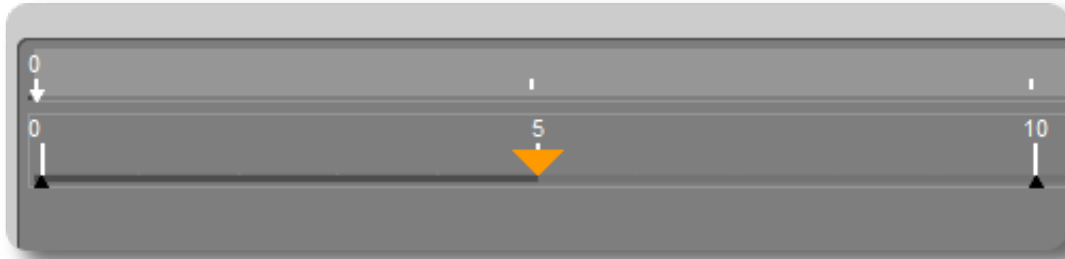


The **Cube** is located half-way between our **Frame 0** and **Frame 10** locations.

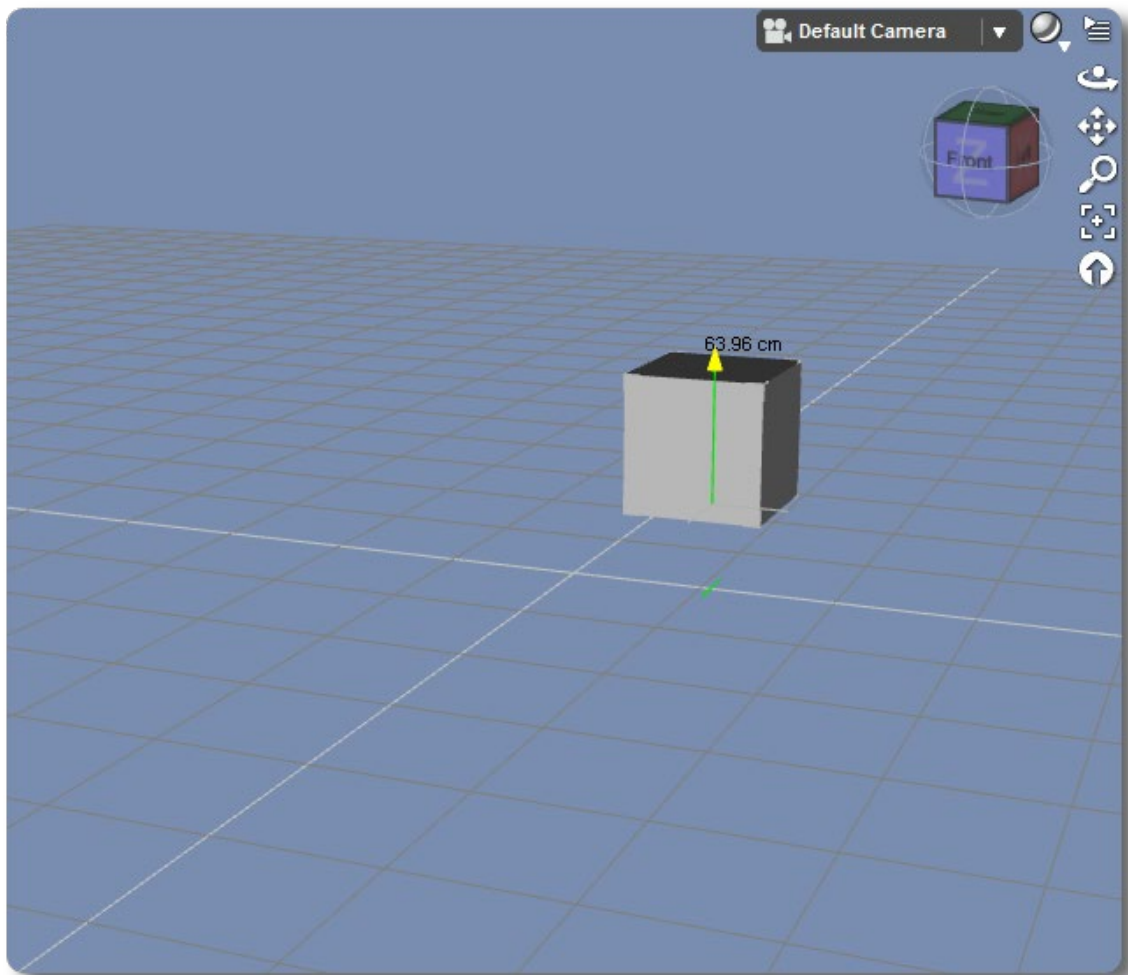




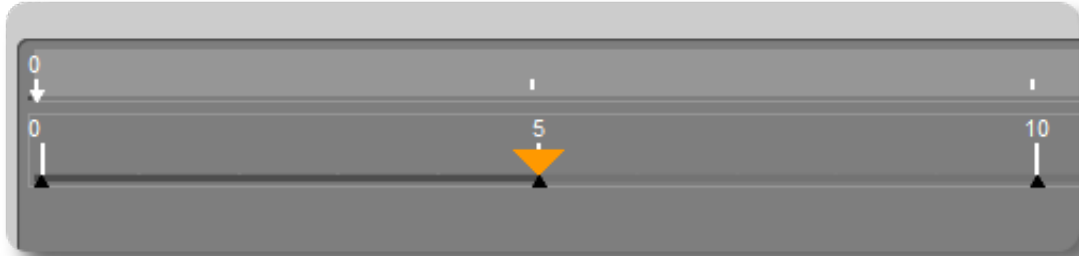
While we are still on **Frame 5**, let's alter our animation.



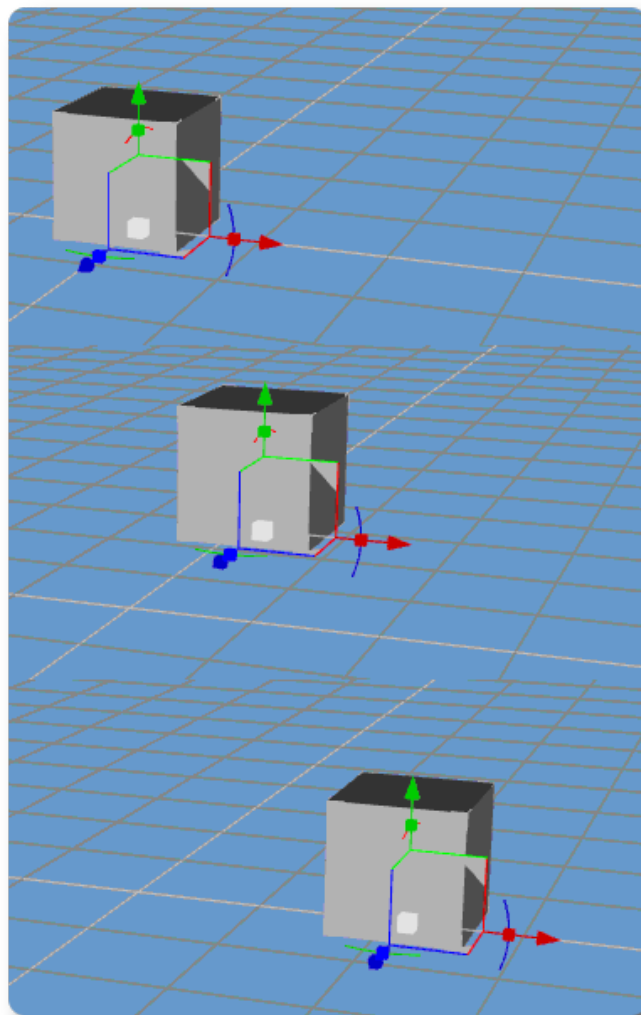
Move the **Cube** upwards, along the **Y-Axis**.



Another keyframe will automatically appear after the movement.

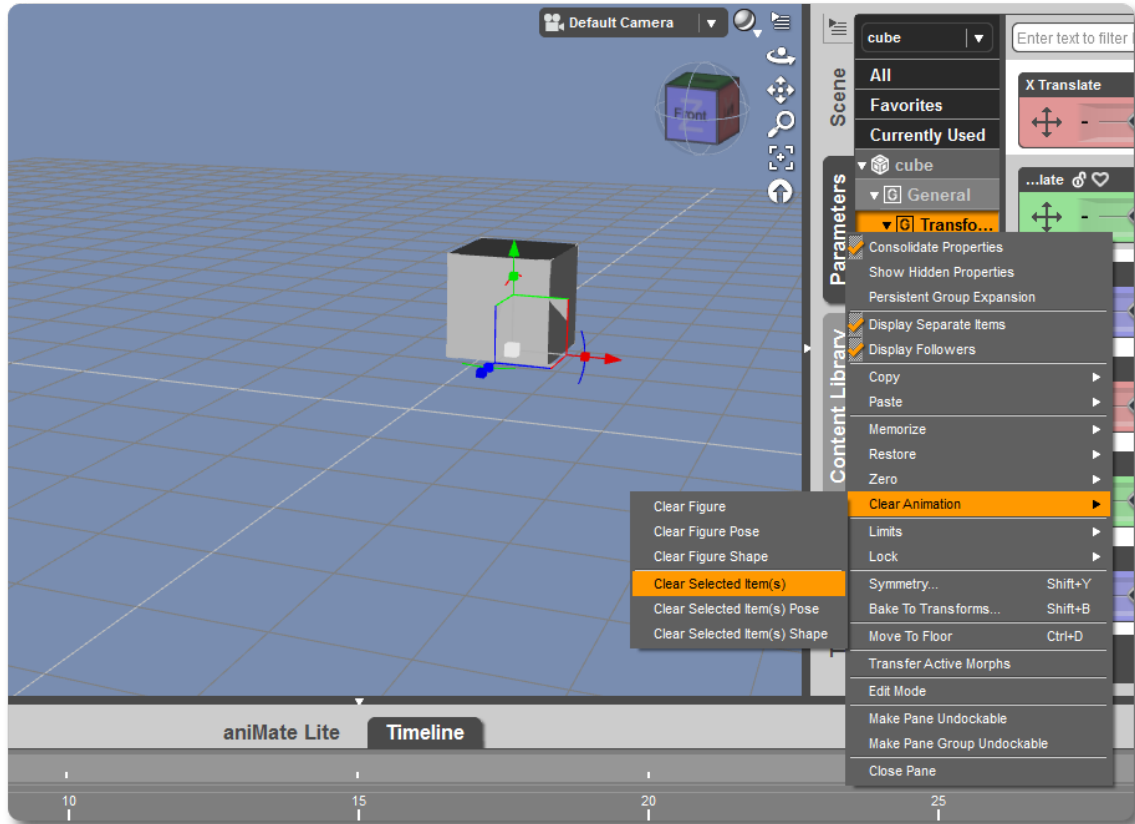


Now when you play the animation, the **Cube** will still head along the **X-Axis**, but it will also move along the **Y-Axis**, reaching it's peek at **Frame 5**, making your **Cube** hop upwards instead of just slide. To make the Cube come back down, change the Y-axis value in **Frame 10**.

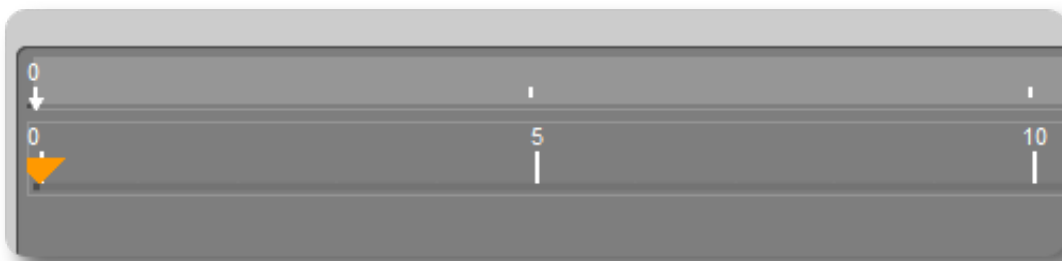


# Clearing Animations

Although you can go through the Timeline and manually delete all your keyframes, if you have a lot of them it is better to just use **Clear Animation**. Find the **Parameters** tab on the right side of DAZ Studio and right-click on the **Parameters** tab. Go to **Clear Animation->Clear Selected Item(s)**...

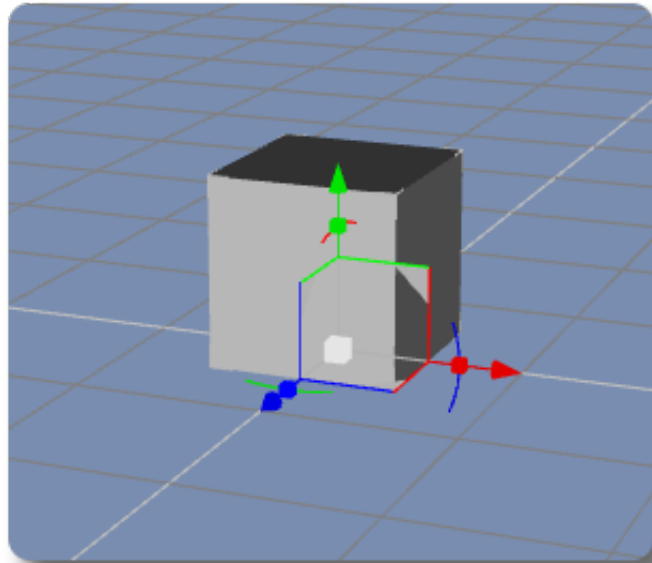


You'll notice all your keyframes disappear from the Timeline. This will reset the object back to the default ( $x = 0$ ,  $y = 0$ ,  $z = 0$ ) position world center in viewport.

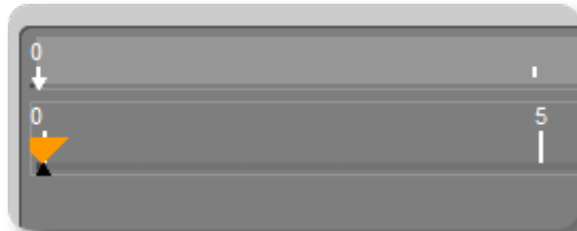


# Scaling & Rotating

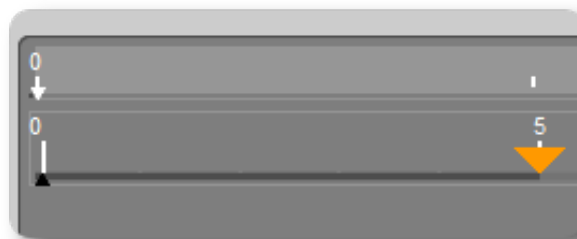
So far we've just been translating our **Cube** in various directions. Since we already cleared our animation, let's try **Scaling** and **Rotating** our Cube in an animation.



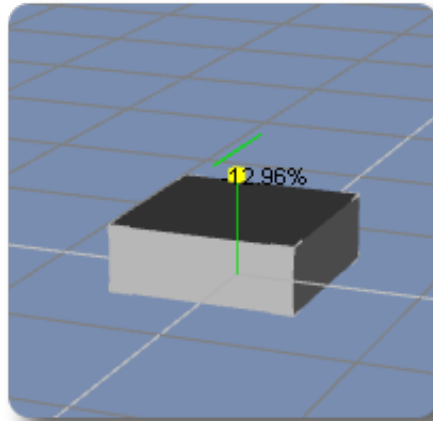
Like before, set your base keyframe at Frame 0.



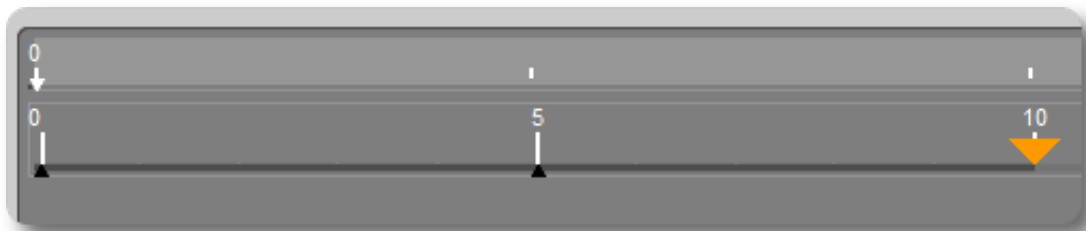
Now go to **Frame 5**.



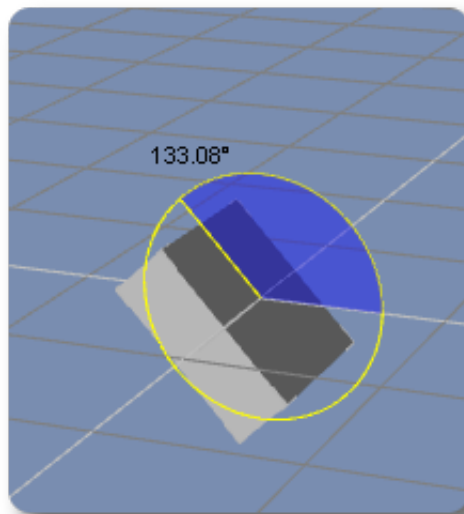
Go ahead and **Scale** your **Cube**. I scaled it on the Y-Axis.



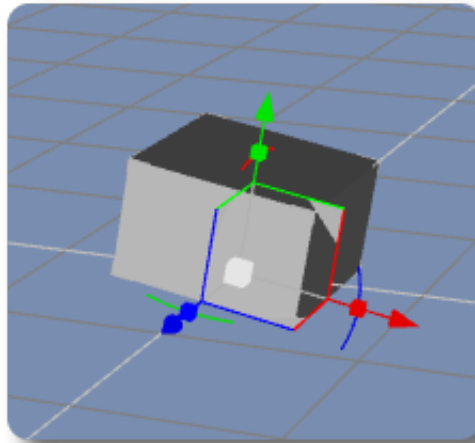
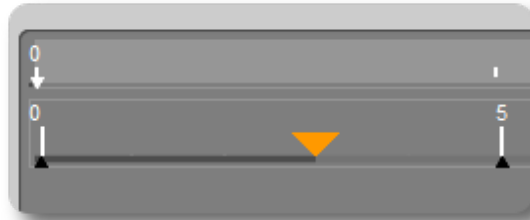
Now go to **Frame 10**.



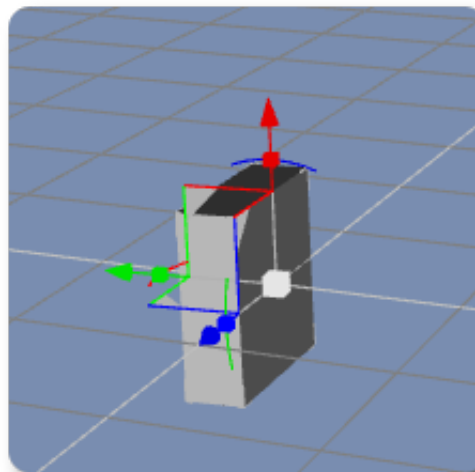
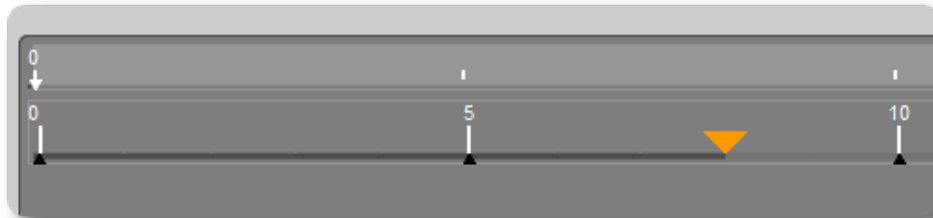
Then **Rotate** your **Cube**; I rotated it along the **Z-Axis**.



If you move to a frame between **0** and **5** you'll notice the **Cube** slowly shrinking.



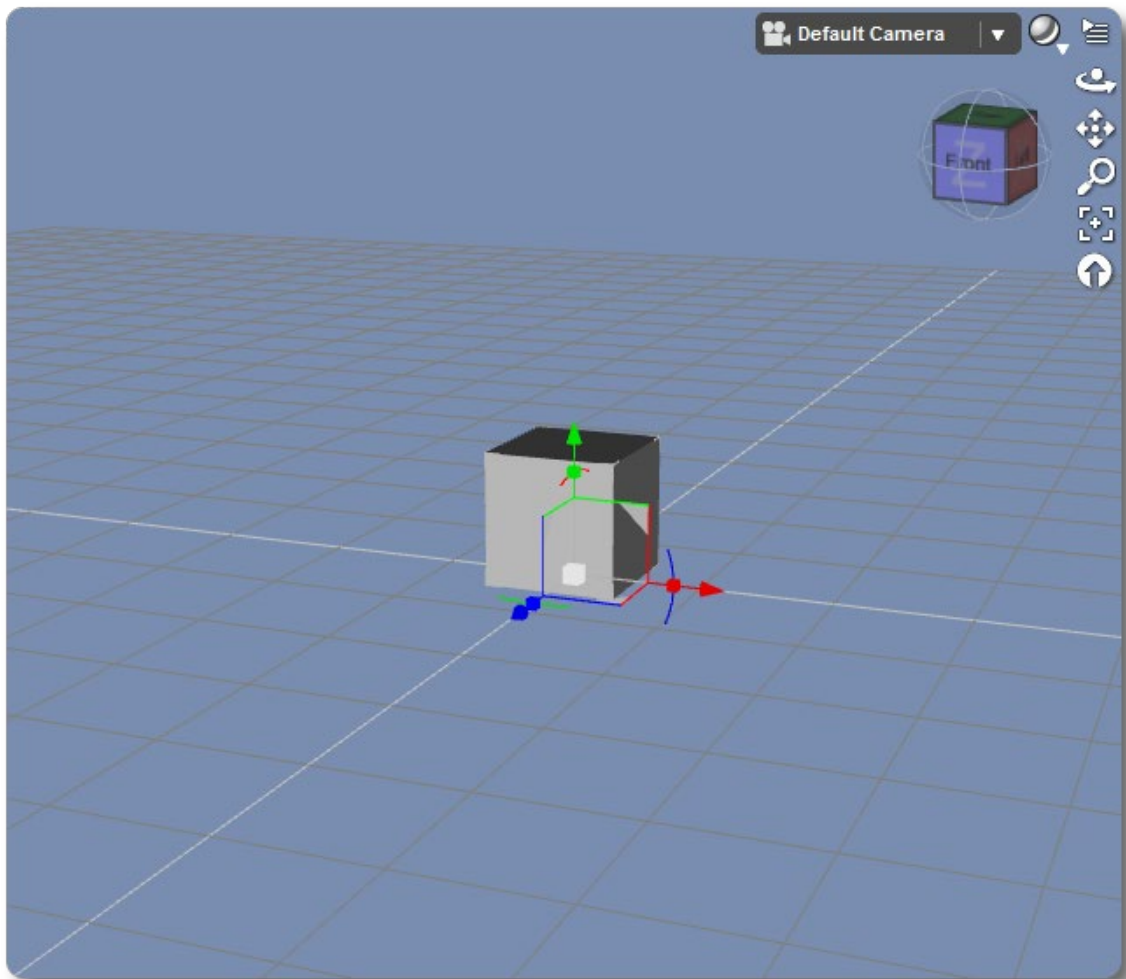
If you move to a frame between **5** and **10** you'll see the scaled **Cube** start rotating.



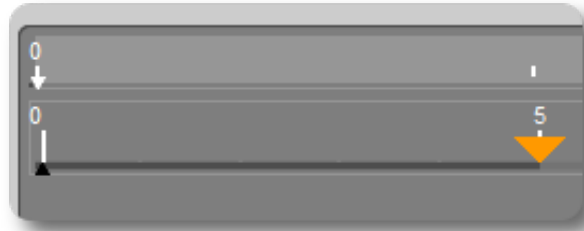
# The Camera

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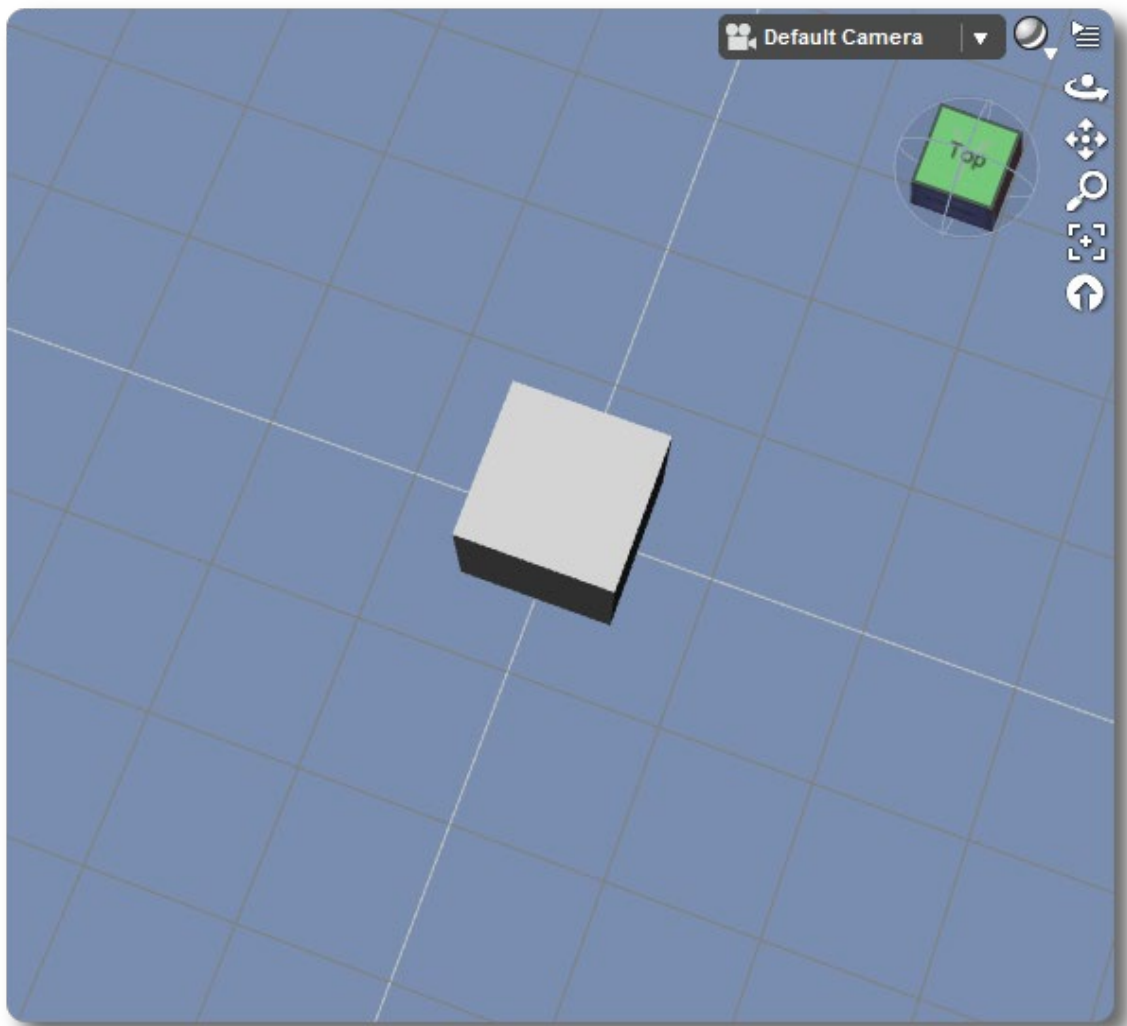
One thing to note, if you haven't noticed already, is that the camera is also an object. If you were to move your camera in the middle of an animation, the camera would move during the animation like any object you had adjusted.



For instance, let's go to Frame 5.

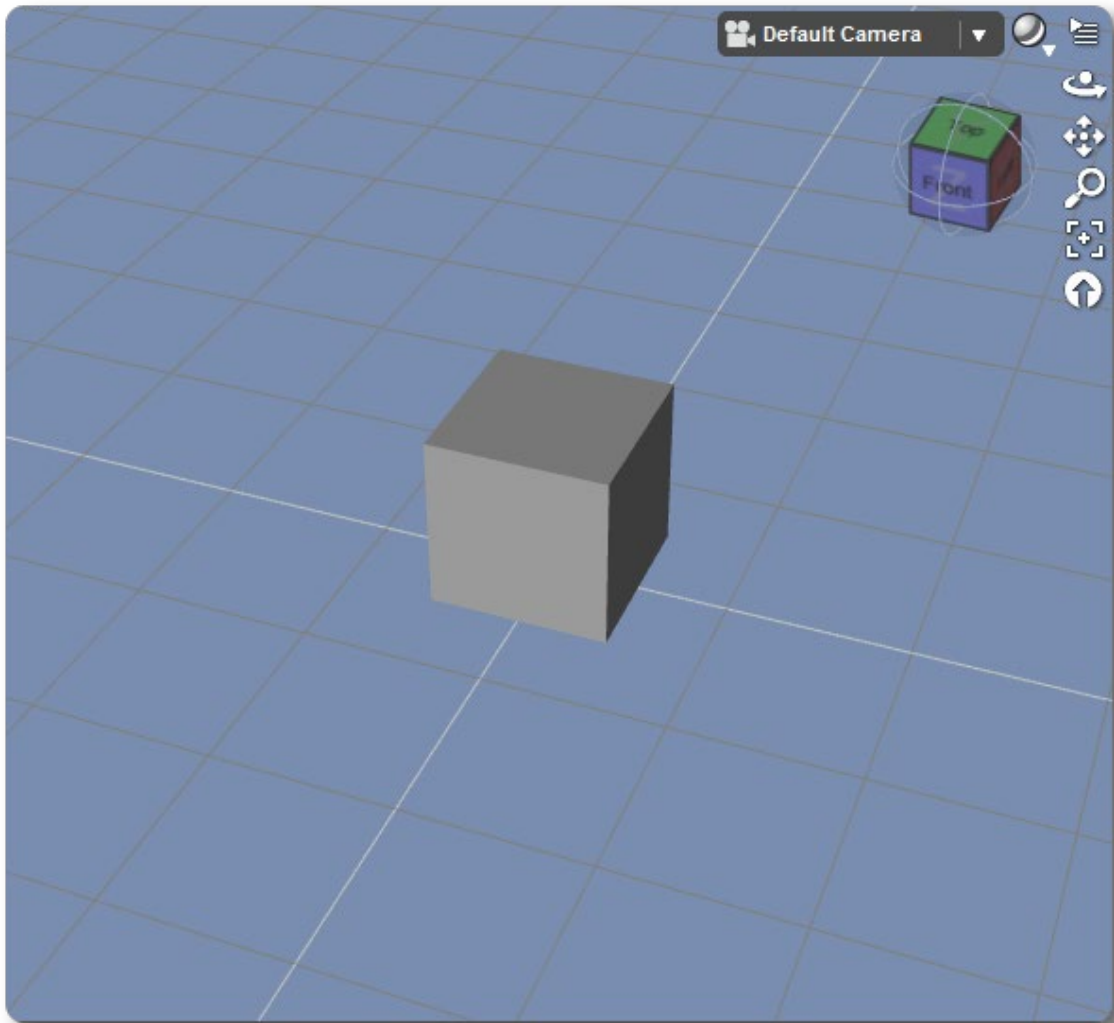


Then let's rotate our camera

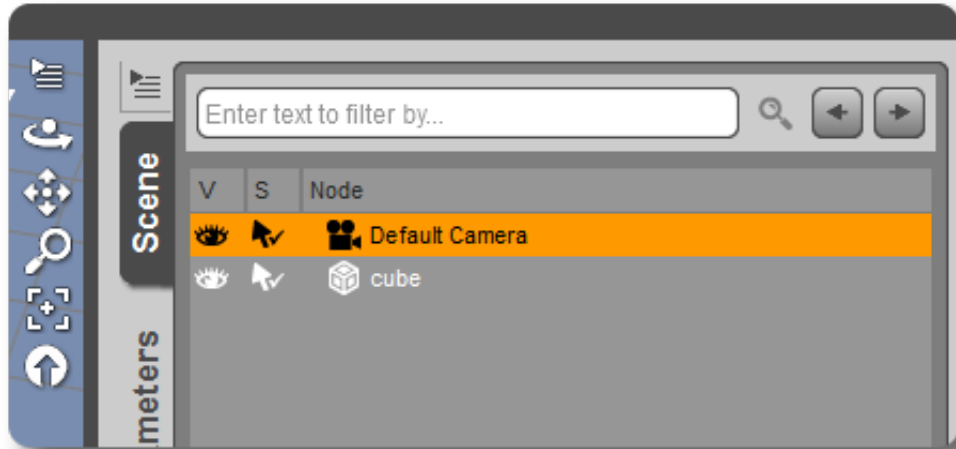




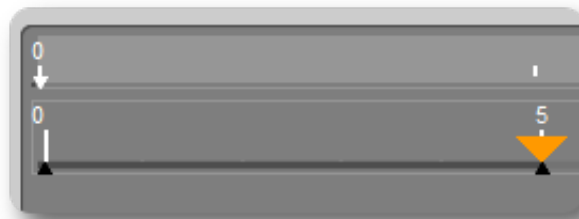
If we look back at **Frame 2**, you can see the camera moving from its default position to the new rotated position.



To select the Camera object, in the Scene tab left-click on **Default Camera**.

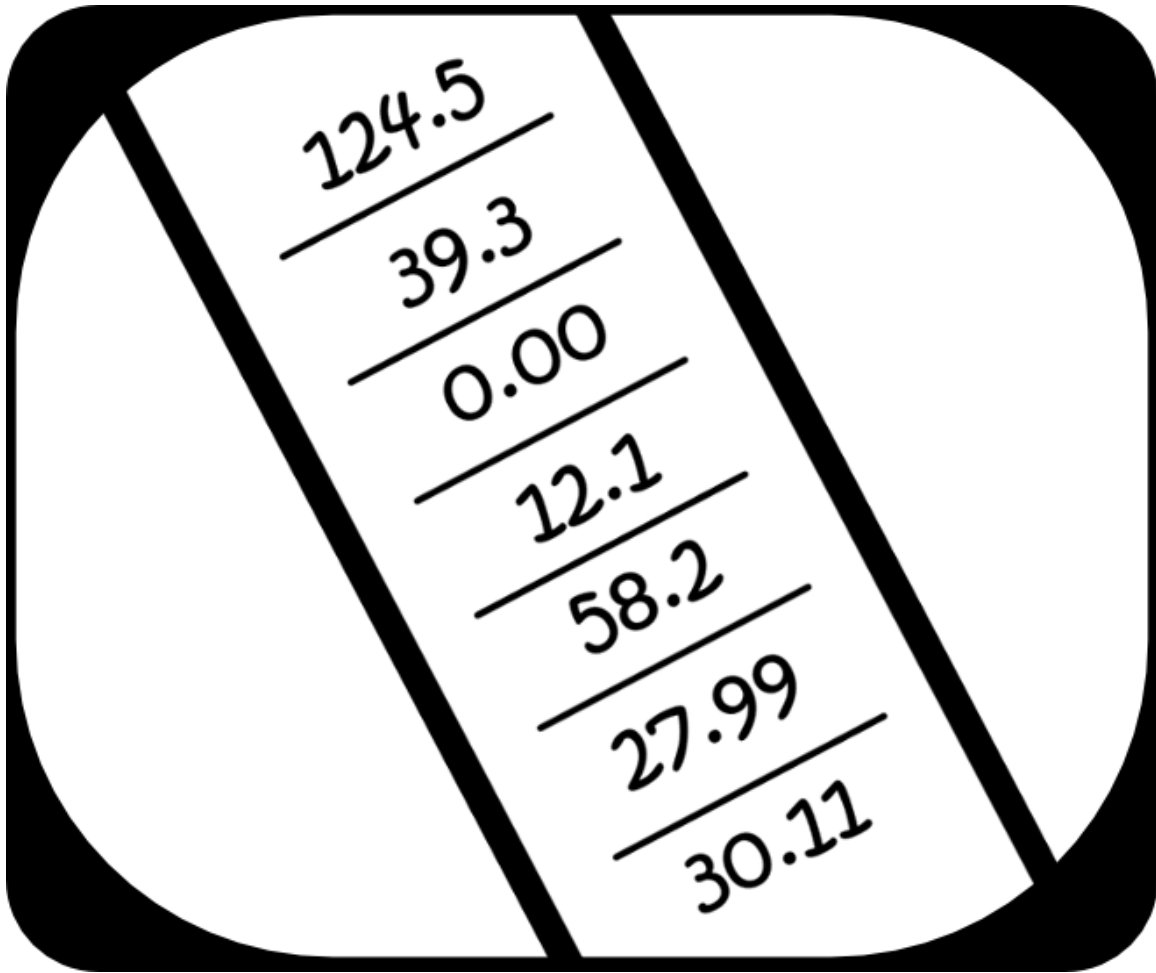


Once you select the Camera, you'll be able to see its Timeline. Then you can delete any unwanted keyframes. Be careful if you use **Clear Animation** on the Camera as it will not go back to its default position, but instead move to the very center of the scene.

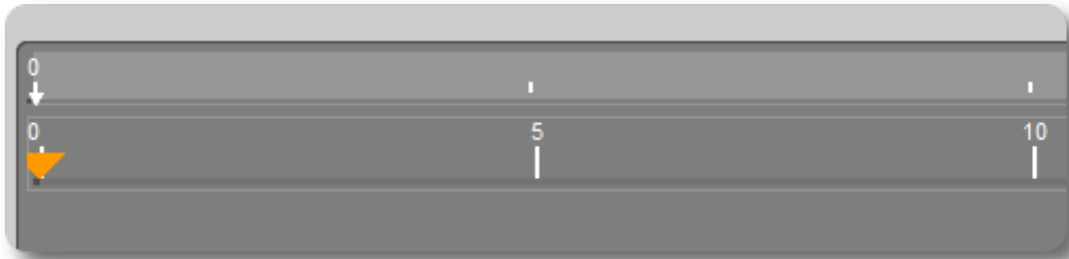


**NOTE:** Each object will have its own timeline and keyframes. When you Save a Scene, all of the animation data is saved for each object.

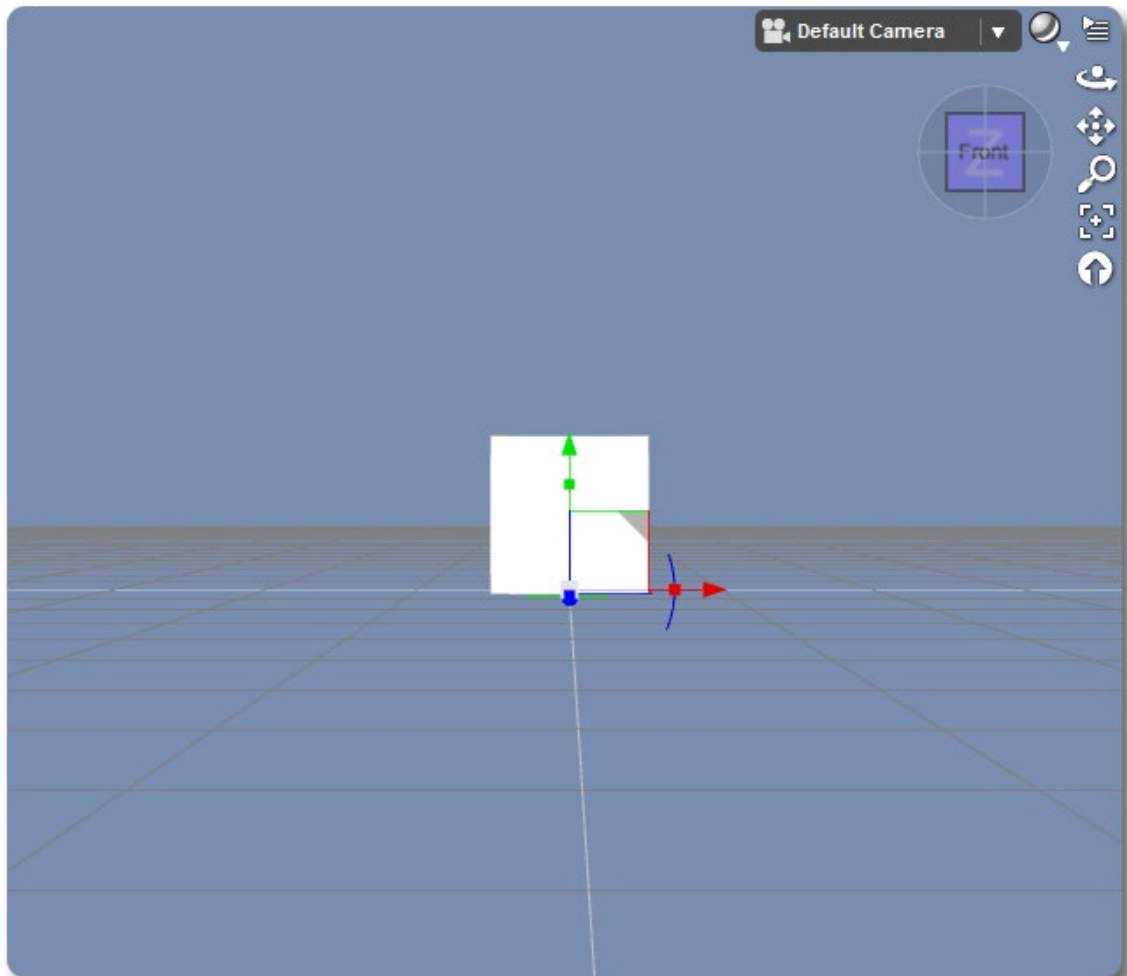
# Chapter 4: Technical Animating



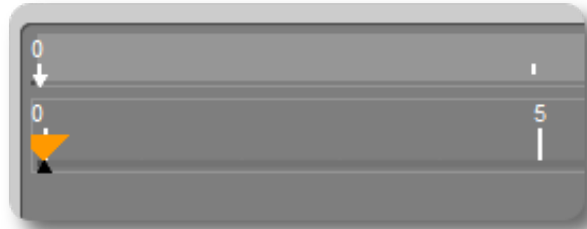
Now let's create a new animation. Select your **Cube**, clear the animation from before or start a new scene and create a new cube primitive cube. Go to **Frame 0**.



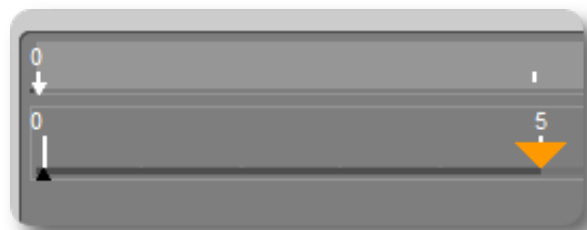
Using the cube control, set your viewport view to **Front**.



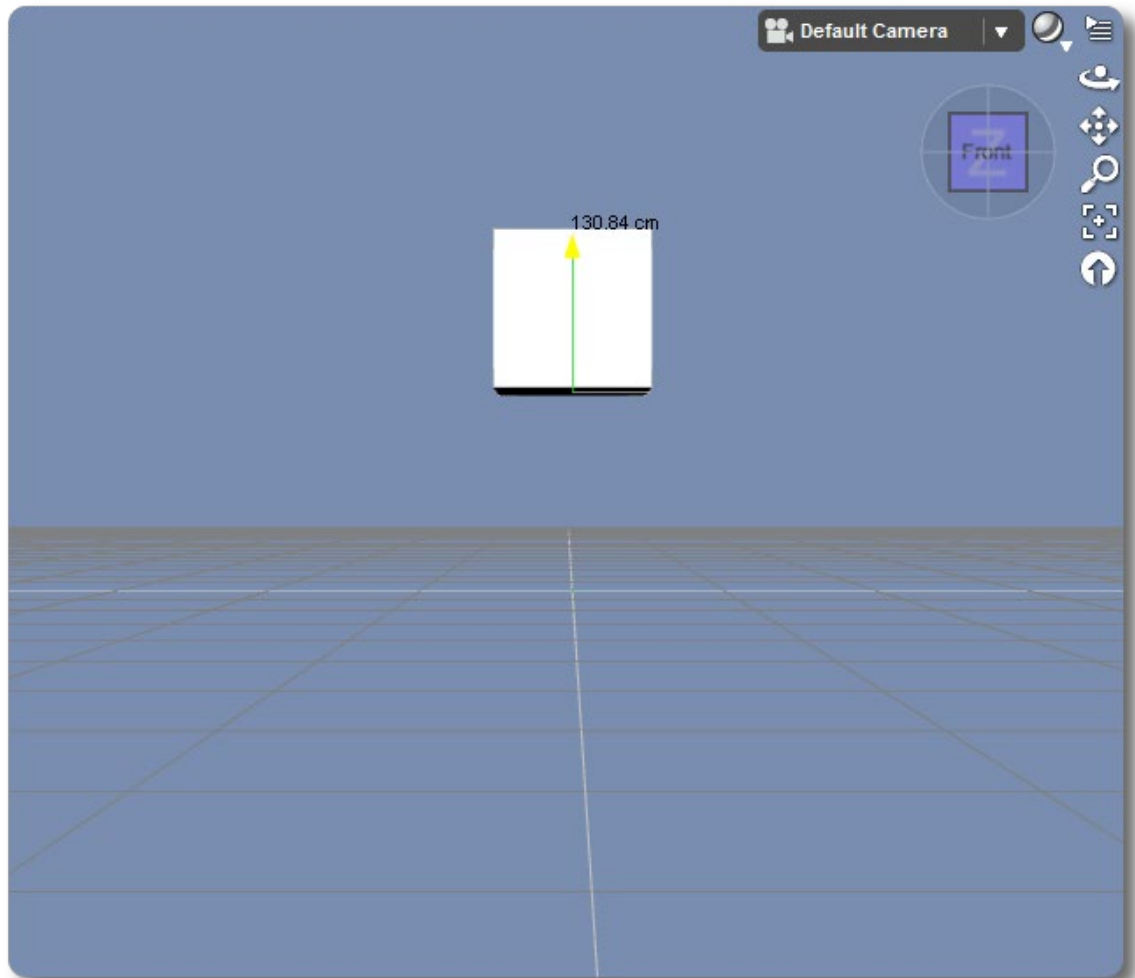
Set your base keyframe for the **Cube**.



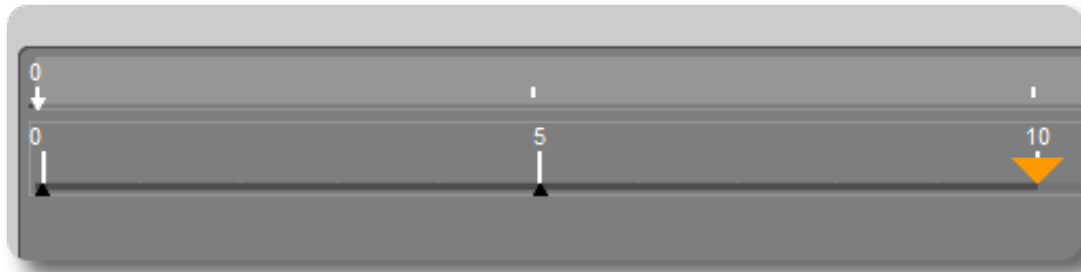
Now move to **Frame 5**.



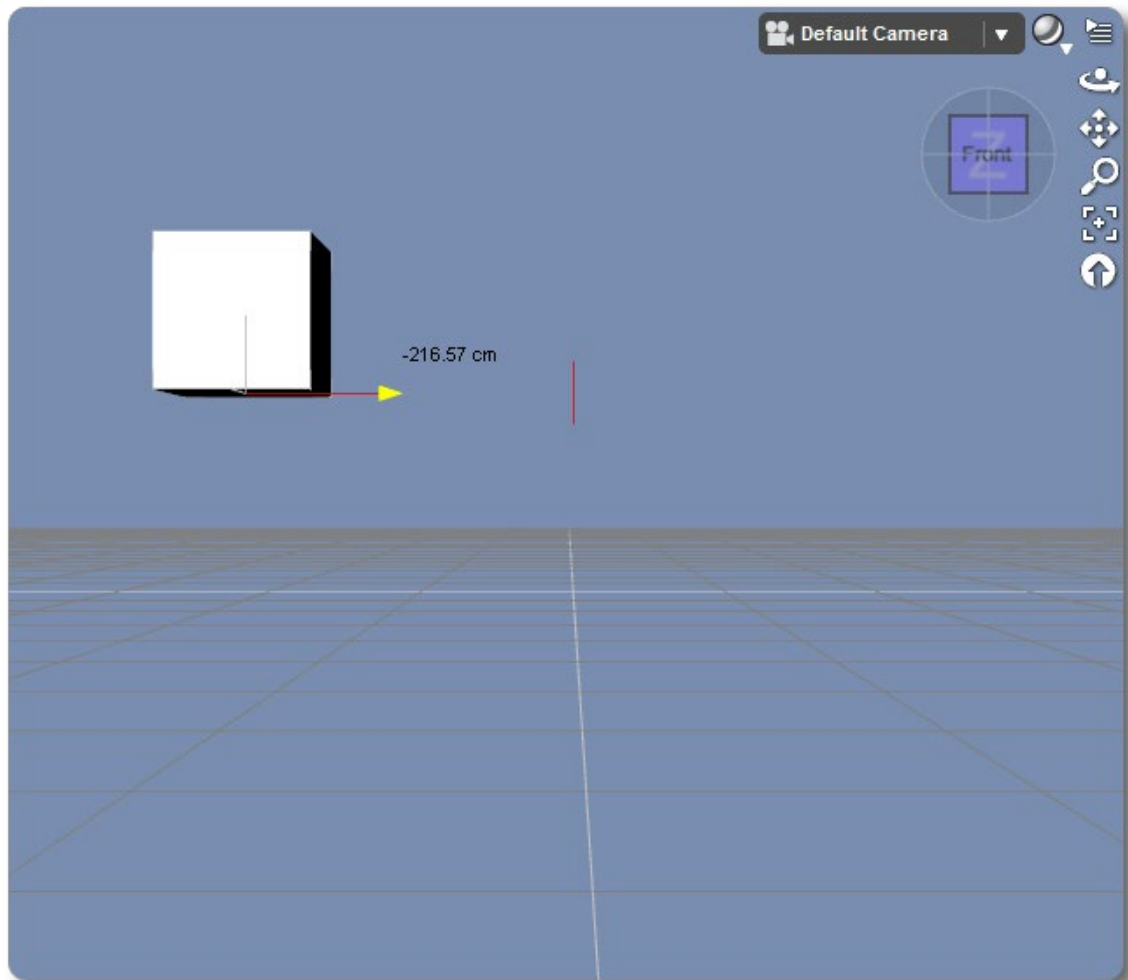
Move the **Cube** up along the **Y-Axis** as shown. Use the **Create Keys** icon to create a new keyframe. You must do this even if a new keyframe seems to have automatically appeared. This ensures that your timeline is synced exactly where you want and not where an automatic interpretation has calculated.



Then go to **Frame 10**.

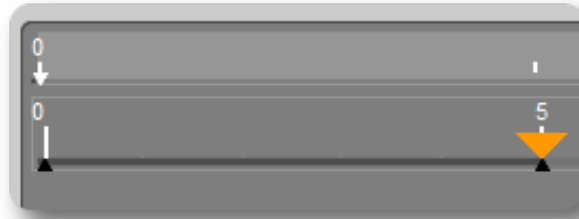


And move the **Cube** left, along the **X-Axis** and **Create** another keyframe.



# Hard Keyframes

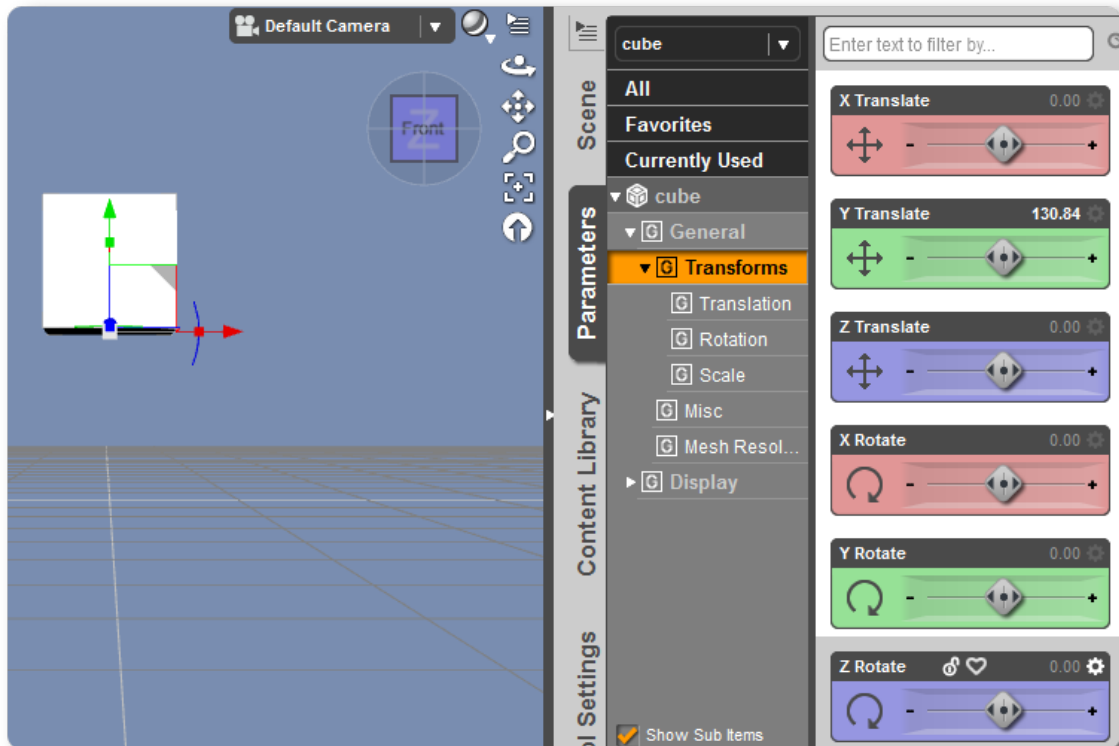
Keyframes aren't always *JUST* keyframes. If we move to **Frame 5**, where our middle keyframe is...



You'll notice that the transforms for the **Cube** are exactly where I set them at:

**Y Translate: 130.84**

**X Translate: 0.00**





Look at all of these keyframes that I made...

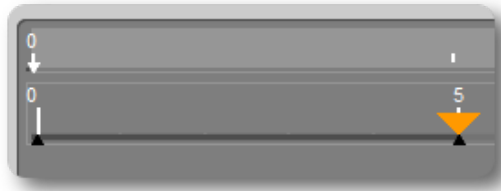


...using the *Create Keys* button. When I create keyframes like this, they are what I consider to be **Hard Keyframes**, as in they won't be altered by the software.

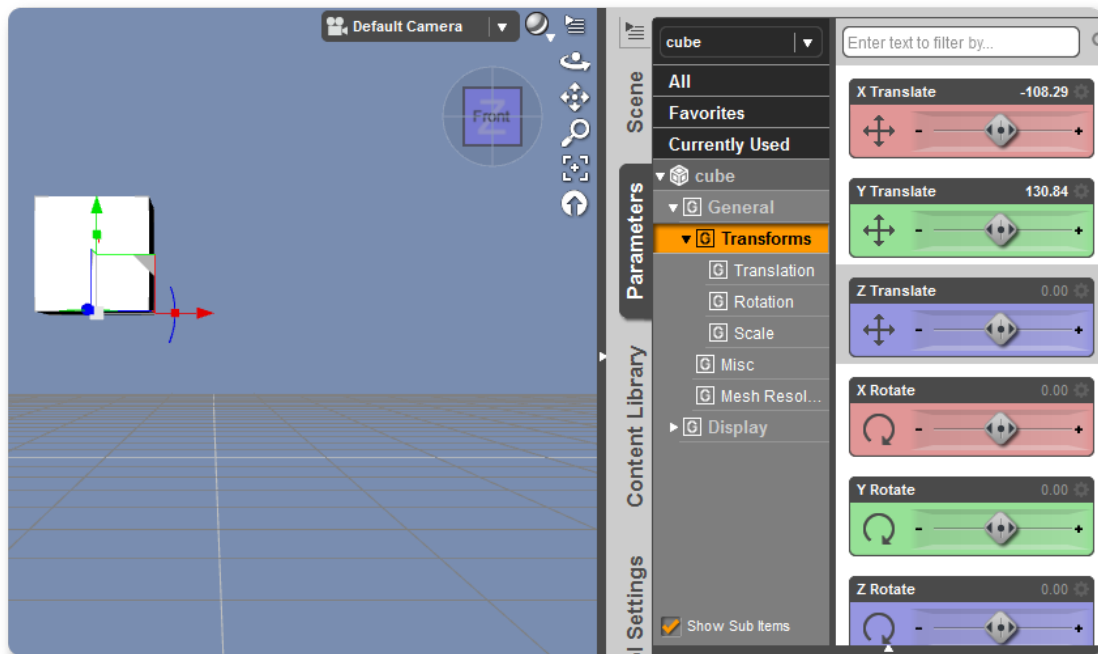


# Soft Keyframes

Alternatively, if I made the same animation, but instead of manually pressing the **Create Keys** button each time I moved the **Cube** and just accepted the automatically generated keyframe, I would get **Soft Keyframes**. These keyframes can be altered by the software. For instance, create the animation again, but for **Frame 5** and **Frame 10**, don't manually press the **Create Keys** button. Instead, take the automatically generated ones.



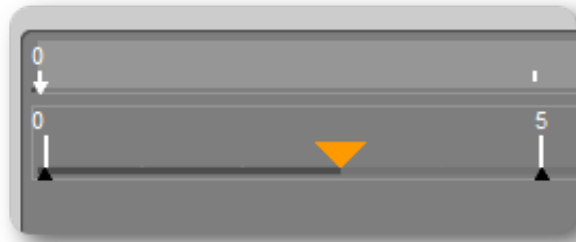
At **Frame 5**, in the new animation using **Soft Keyframes**, we see that the **X Translate** actually changed, which shouldn't happen since we don't start moving along the **X-Axis** until AFTER **Frame 5**. The **X Translate** value is now in the negatives, closer to the value at **Frame 10**. With **Soft Keyframes**, the software manipulates the keyframes in an attempt to produce a fluid animation. In general, you will probably want to use **Hard Keyframes**, but it is up to you to decide that.



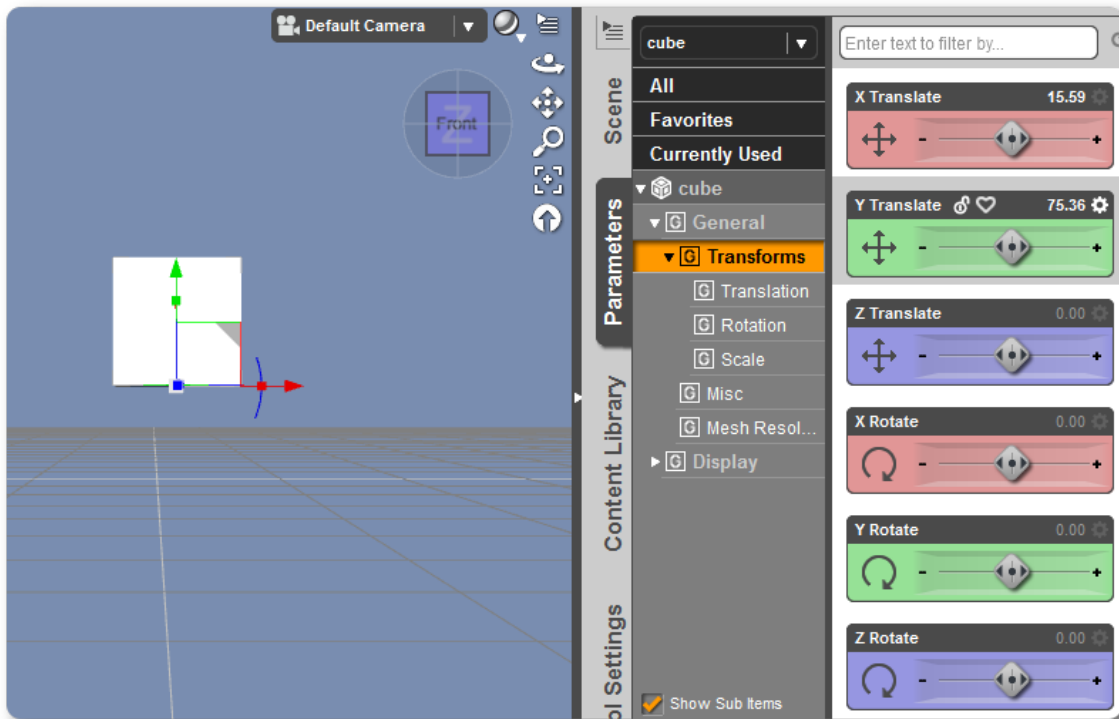
(Note: Changing the value of a **Soft Keyframe** will make it a **Hard Keyframe**)

# Ghost Movements

Let's take a look at our original animation that is using **Hard Keyframes**. There is an interesting thing to notice if we look at **Frame 3**.



In our animation we never moved the Cube in the positive direction along the **X-Axis**. However, at **Frame 3**, the **Cube** has a positive value for our **X Translate**.

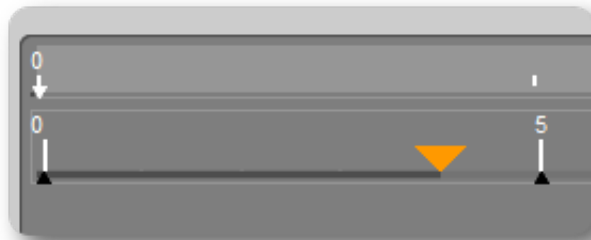


This occurrence is a **Ghost Movement**, and it's the software's attempt once again to make the animation fluid. In the next section, I'll show you how to fix this.

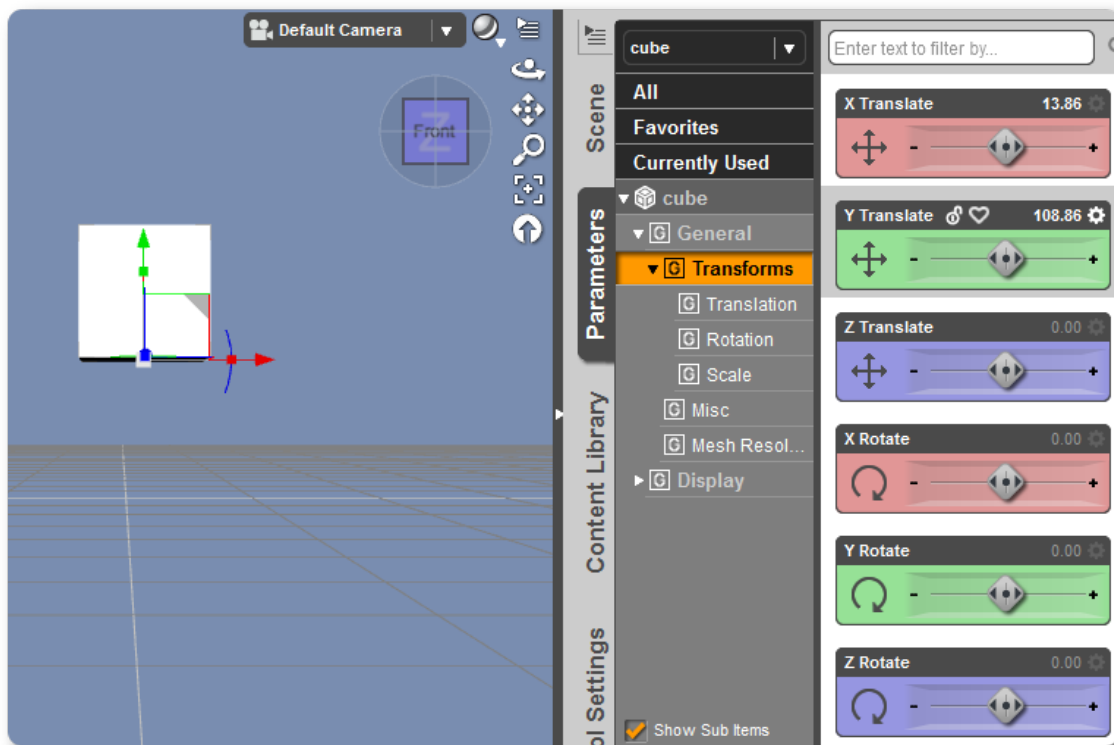
# Parameters

A good way to fix **Ghost Movements** in your animations, is to create a keyframe before and after your other keyframes with your desired value. For an example, let's fix the **Ghost Movement** in our **Cube**'s animation.

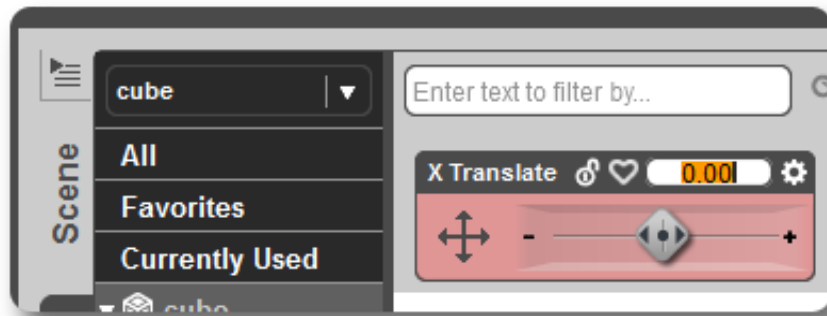
We will place keyframes before and after the keyframe at **Frame 5**. So let's set our **Current Frame** to **Frame 4**.



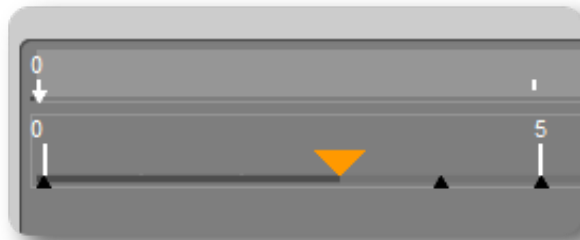
We can see that at this frame we still have a positive **X Translate**.



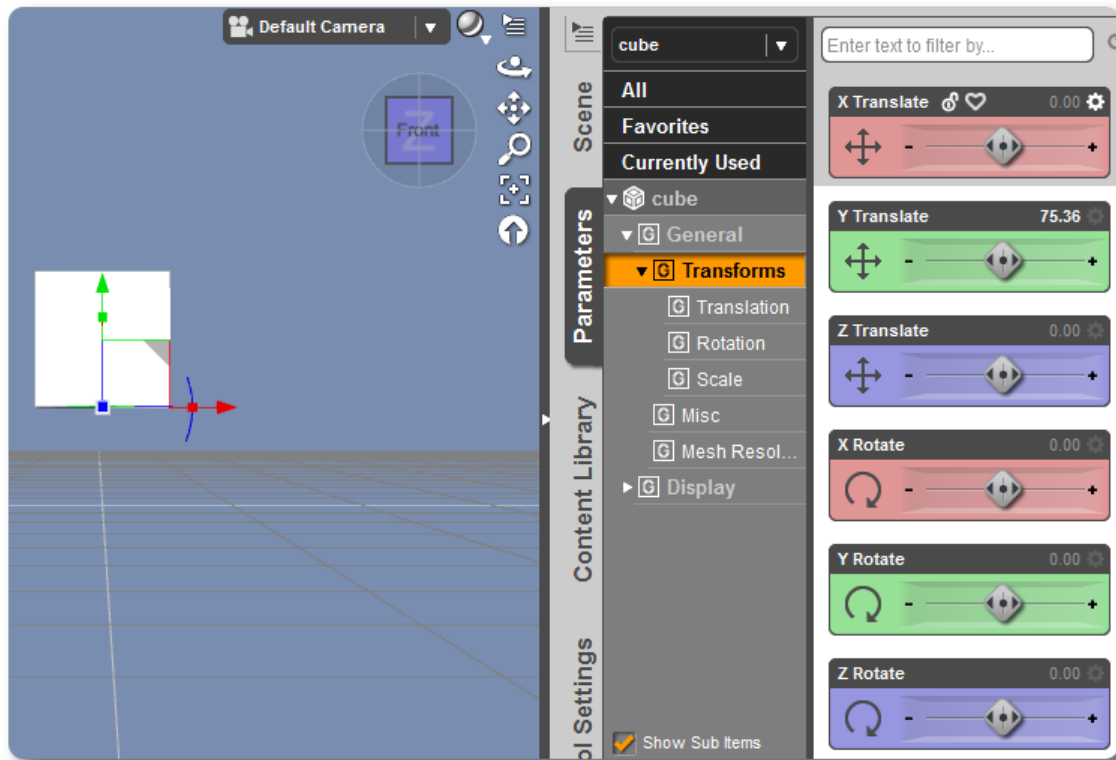
Go into your parameters for the **Cube** object. Since we desire the Cube to go straight up, we don't want any variation in our **X Translate**. So set that to **0.00**.



To test if it's working, let's look at **Frame 3** again.



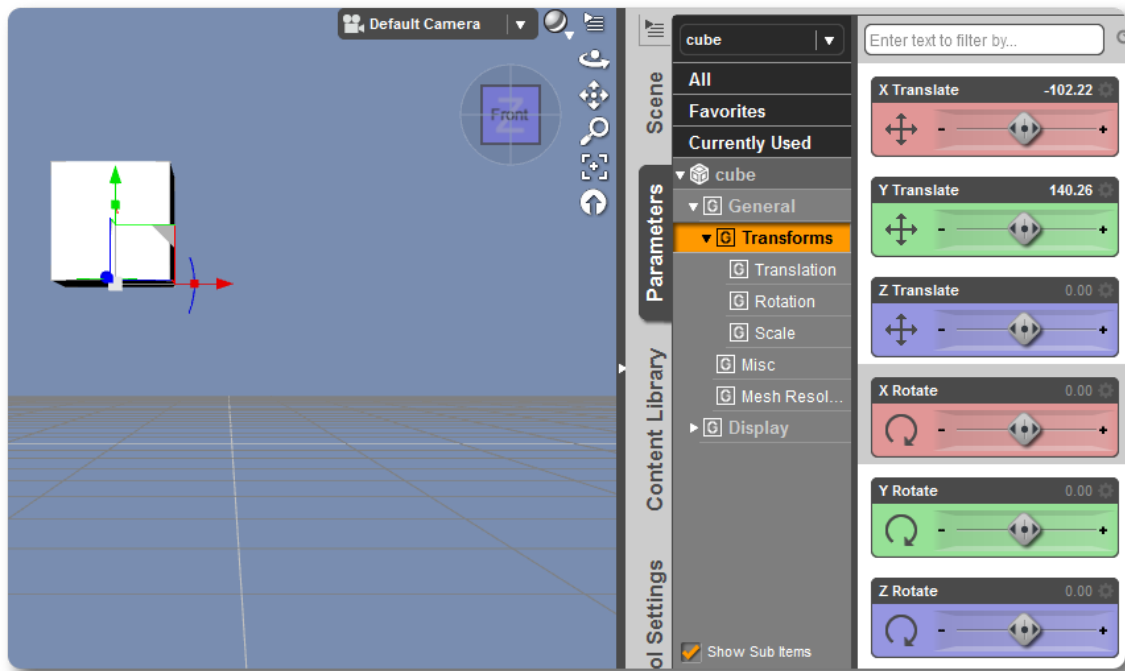
The **Ghost Movement** has stopped on the left side of **Frame 5**. Now the **X Translate** is 0.00 on our **Frame 3** which previously had a positive value.



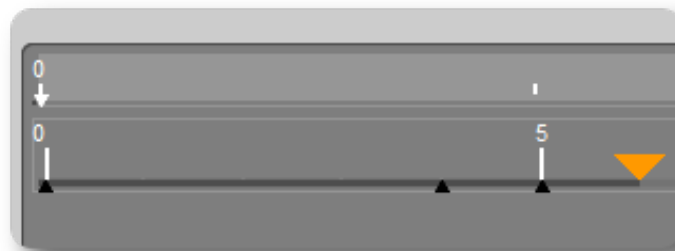
Let's look at **Frame 7**.



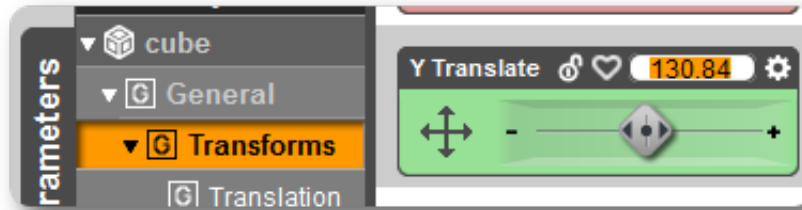
**Frame 7** also has some Ghost Movement, it's higher than our Y Translate peek. The highest **Y Translate** should be **130.84**, but instead we have a value of **140.26**.



Let's fix the right side of our animation by going to **Frame 6**.



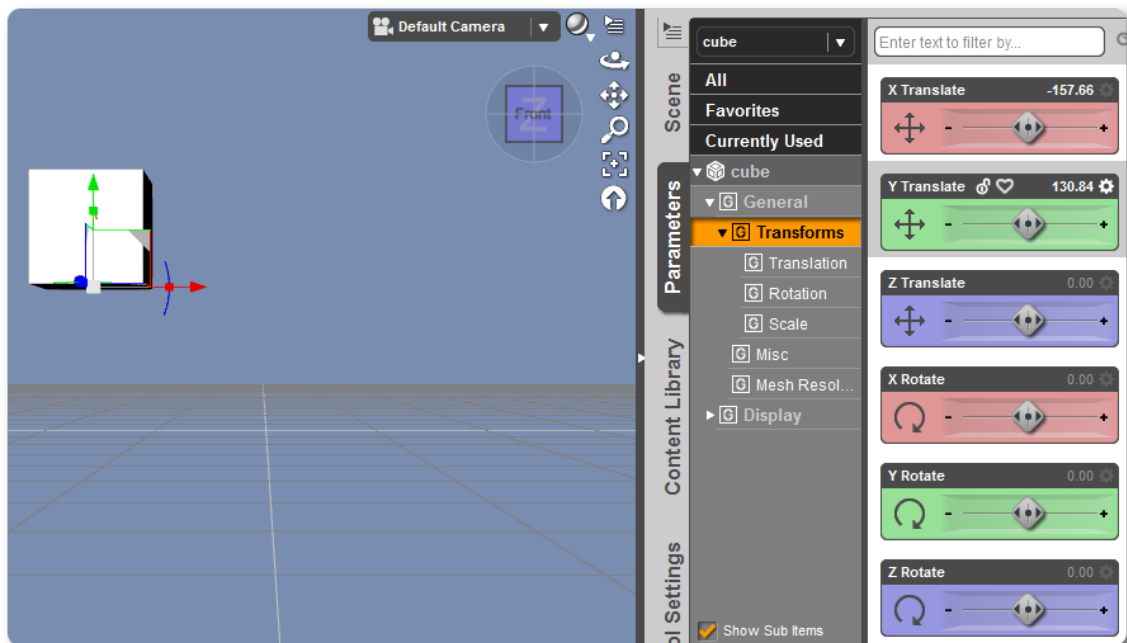
Change the **Y Translate** value to the peek value, which in this case is **130.84**.



Now we have keyframes on either side of **Frame 5** that we are using to fix our ghost movement problems. You can check this by going to Frame 8.



It looks like we fixed the right side of the animation.



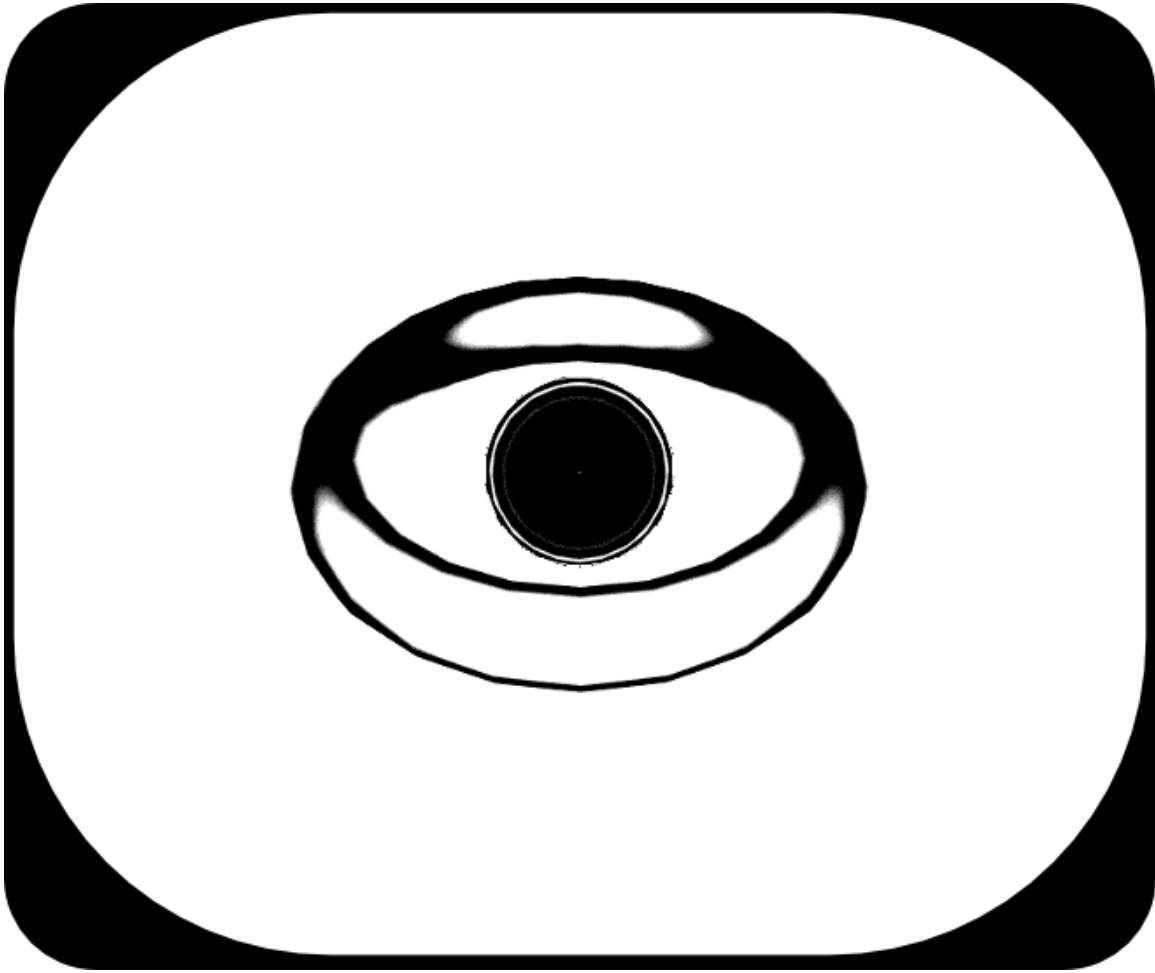


When you play it, it should move up completely vertical, then to the left completely horizontal.

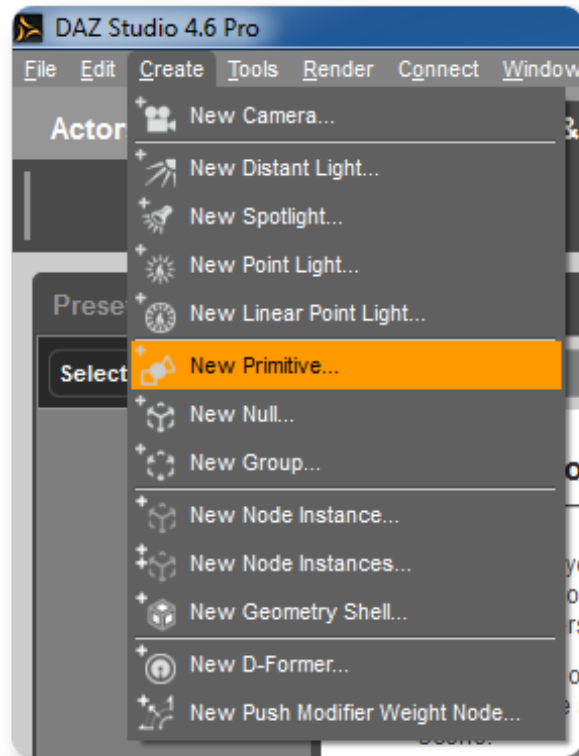


If for some reason you make an animation and this does not fix your **Ghost Movement** problems, try placing a few keyframes with the desired values in between 2 keyframes where the problem occurs until it's solved.

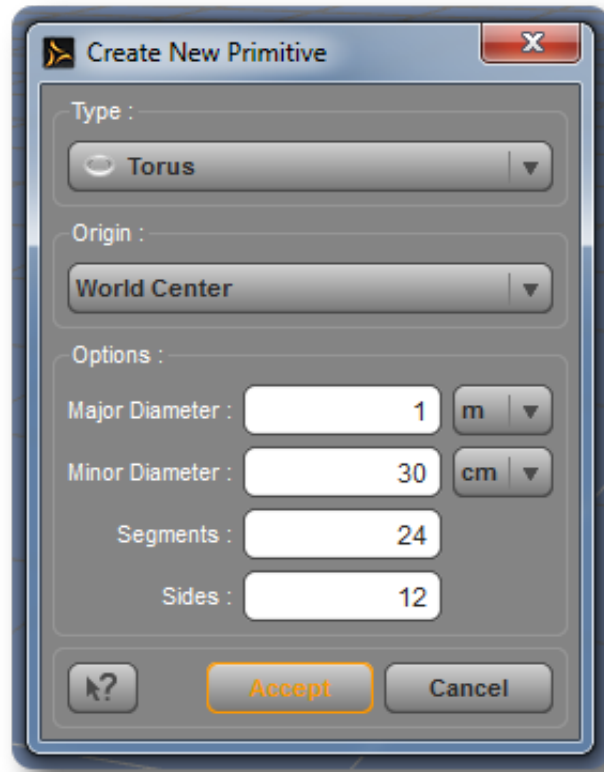
## Chapter 5: Animating Multiple Objects



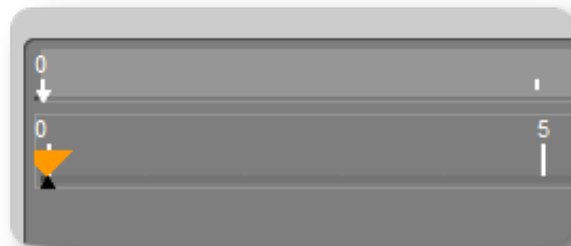
It's time that we worked on animating multiple objects in our scene. Start with a new scene and go ahead and use **Create -> New Primitive...** to create a **Sphere**



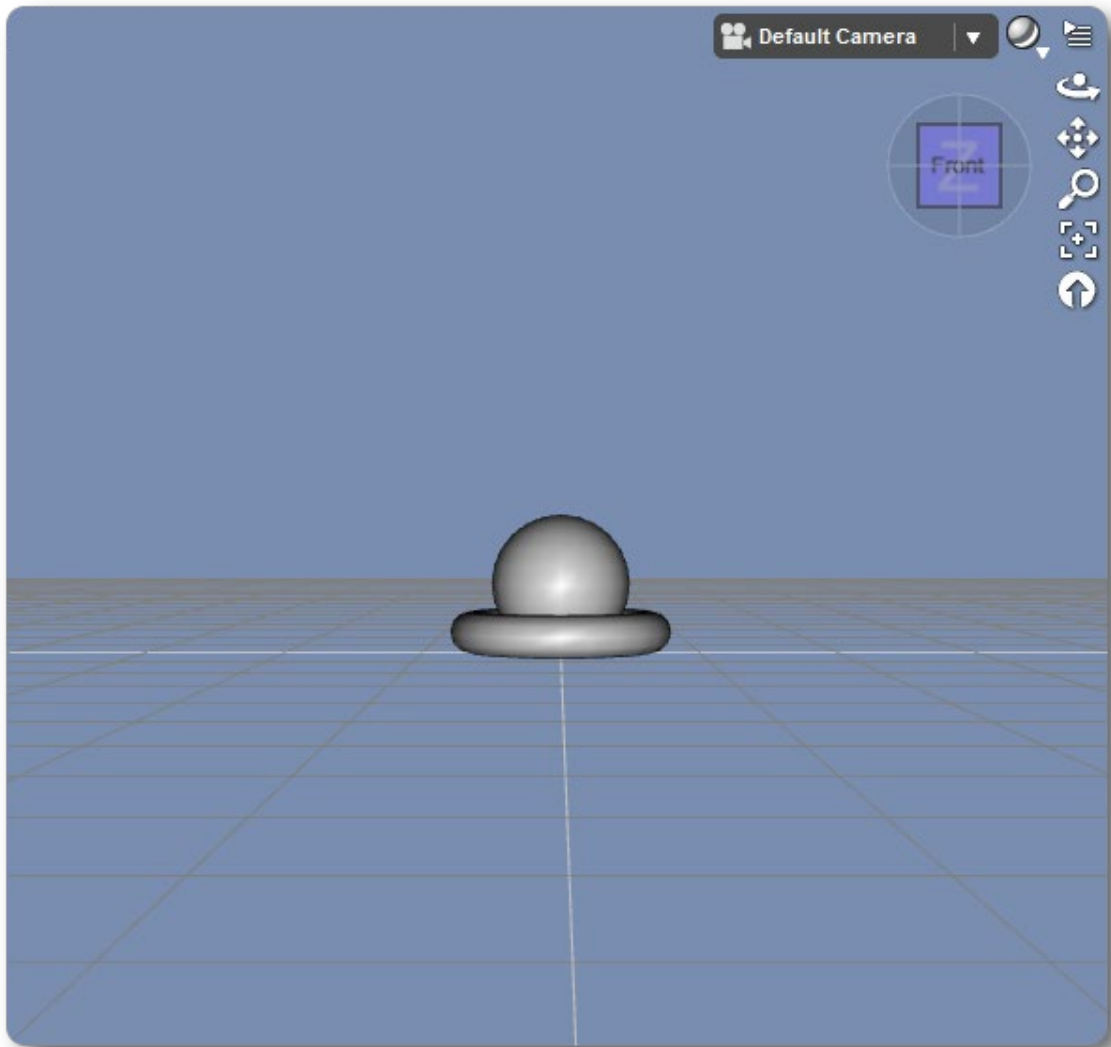
In addition to that **Sphere**, let's add a **Torus** to the scene as well.



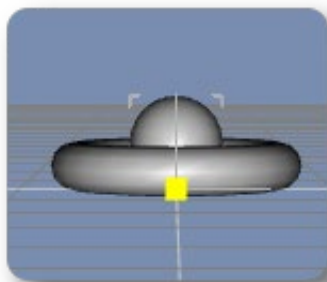
Make sure you are on **Frame 0**.



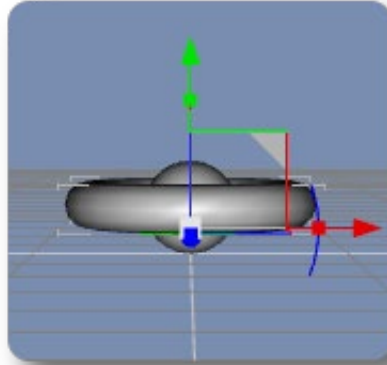
Adjust your view to face the **Front**.



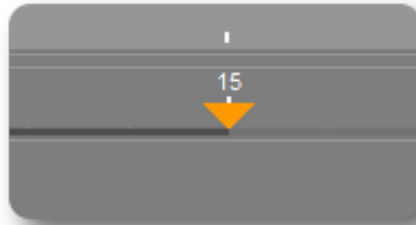
Scale the **Sphere** down to 65% to make it a bit smaller. This should be small enough that it could easily fit through the **Torus** opening.



Let's create a base keyframe for our **Torus**. Be sure to select the Torus in the Scene tab. Now move the **Torus** upwards to where it is centered vertically on the **Sphere** and create your keyframe at Frame 0.



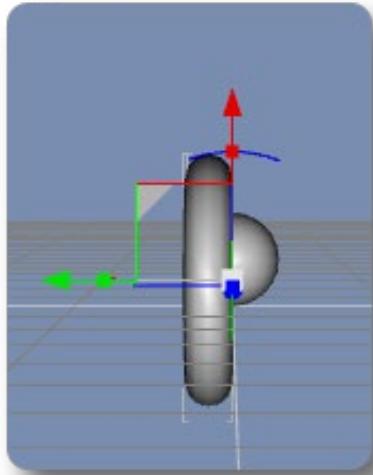
Now go to **Frame 15**.



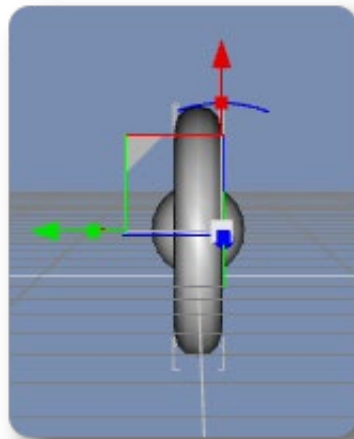
Using the Parameters tab, set the **Z Rotate** to **90.00**. This will rotate the **Torus**.



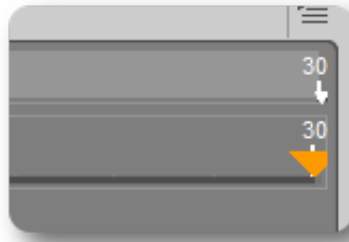
Now that we rotated it, it is offset again...we need to fix that so that from **Frame 0** to **Frame 15** our **Torus** stays centered on the **Sphere**.



Move (retranslate) the **Torus** until once again the **Sphere** is in the very center. Create your keyframe.



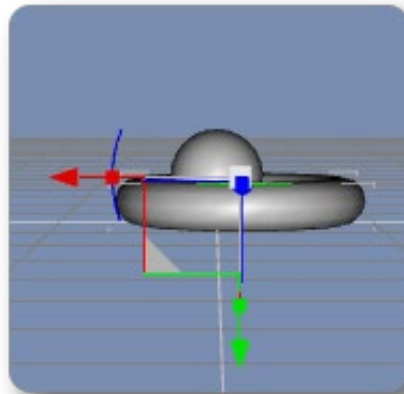
Now go to **Frame 30**.



Change the **Z Rotate** to **180.00**.

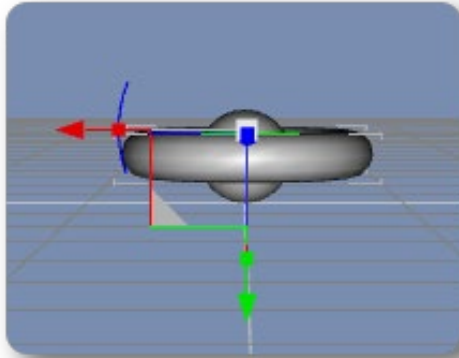


One last time, we need to fix the **Torus** so that from **Frame 15** to **Frame 30** the **Torus** still stays centered on the **Sphere**.





Translate the **Torus** until it looks centered on the **Sphere**. Create your keyframe.

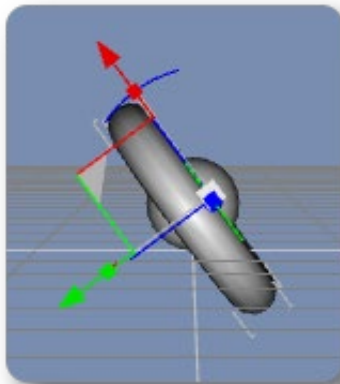


We now have an animation of a **Torus** spinning 180 degrees around the **Sphere** in the center of our scene. Play your animation to see if it is functioning properly.

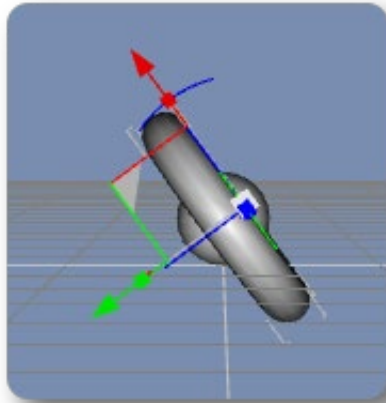
Even with those changes however, we may still have problems. Play and step through the animation, if you spot a frame where the **Torus** looks offset go ahead and select that frame.



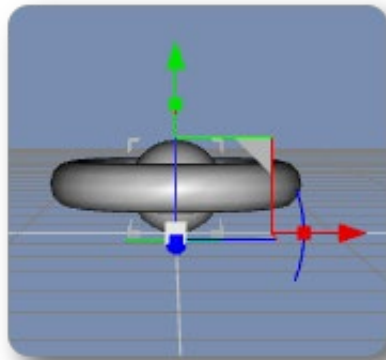
For instance my **Frame 20** looks offset to me.



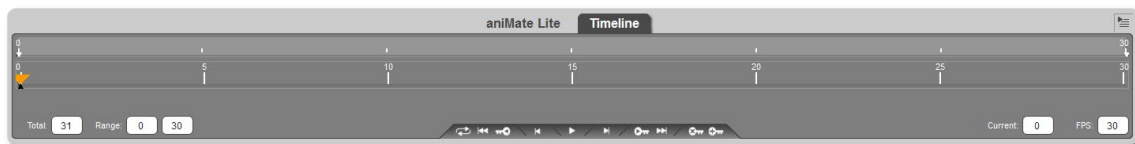
Go ahead and fix it then keep doing this until your **Torus** spins smoothly at the very center around the **Sphere**.



Now select your Sphere.



You'll notice that the keyframes you had made have now disappeared from the Timeline. This is because each object has its own separate **Timeline**. So now we are going to create a **Timeline** for our **Sphere**, since we created one already for the **Torus**.



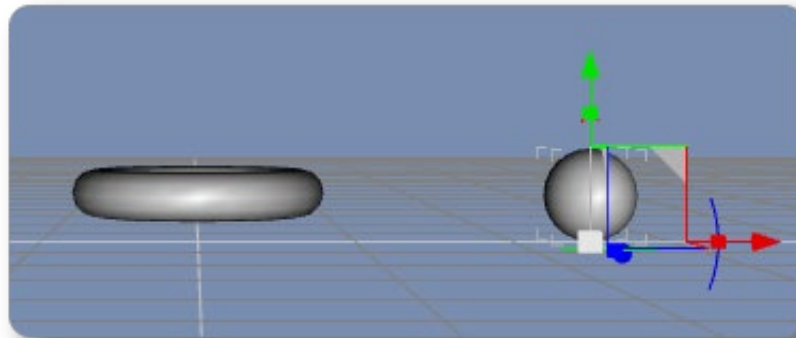
We need to set the base keyframe for our **Sphere**. Go to **Frame 0**.



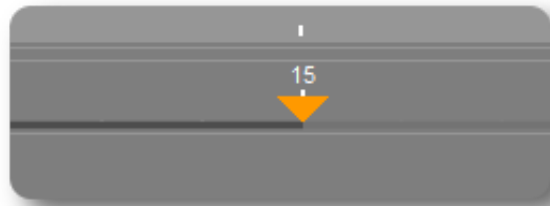
Move the **Sphere** along the **X-Axis** a good amount. I chose **250.00**.



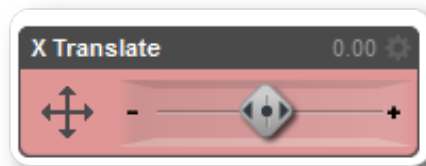
Now your **Sphere** is to the right of your Torus. Create your new keyframe.



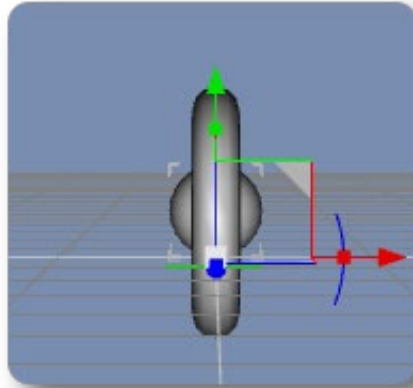
Now go to **Frame 15**.



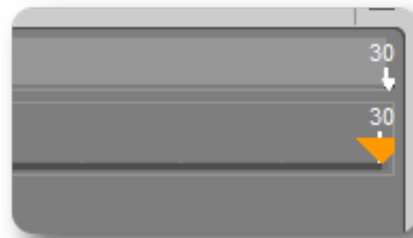
At the middle of our animation we want the **Sphere** to be in the center of the **Torus**, so at **Frame 15** we set the **X Translate** of our **Sphere** to **0.00**. This isn't a crucial step, but for such animations where two objects are working together to create an animation, you may need to add these extra keyframes when an object needs to be at a specific location in a specific frame of the timeline.



Create your keyframe.



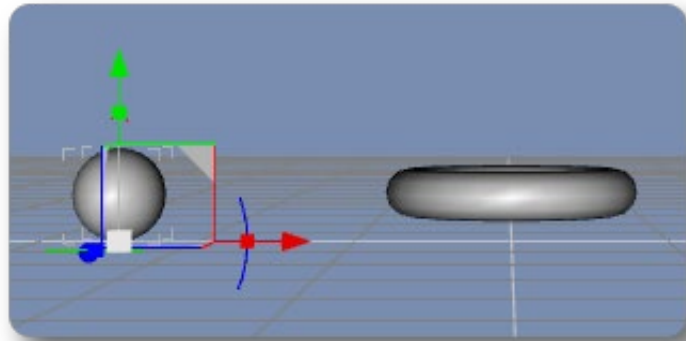
Now go to **Frame 30**.



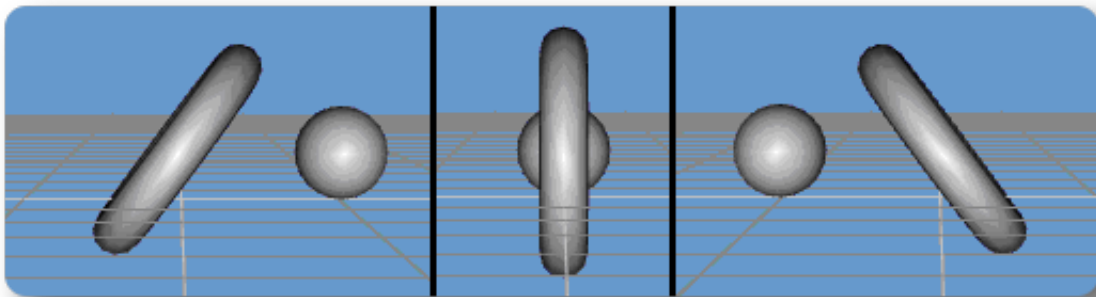
We want the **Sphere** to be on the opposite side of the **Torus** at the end of the animation, so we set the value at **Frame 30** to be **-250.00**.



Now the animation is completed, and ready to be watched with the Play button.



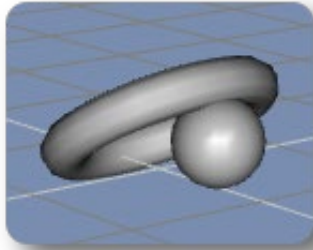
This is the animation. The **Sphere** comes from the right side, moves through the **Torus**, and exits the **Torus** towards the left.



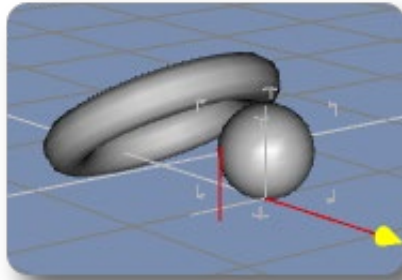
# Object Collision

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In the previous example, there should not be any collisions. However, if the **Torus** instead only spun 90 degrees as the **Sphere** was near it, then the **Sphere** would possibly collide into it like seen below.



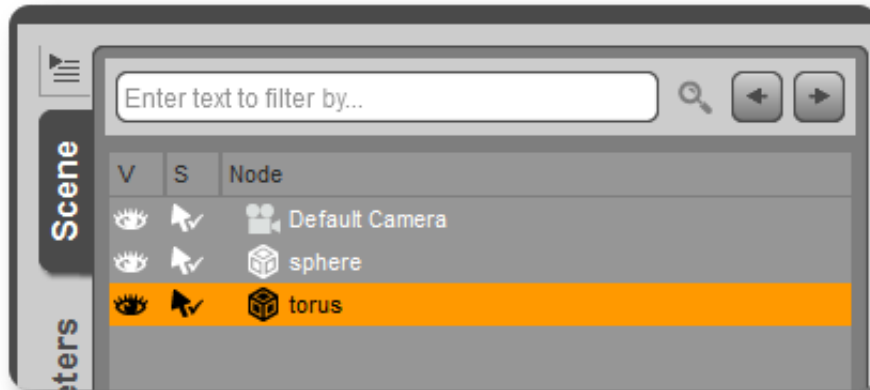
To fix collisions like this without having to rethink your object sizes or speeds just find the frame where the collision occurs. Now move the object out of the collision, but still on course. In the case below, I pulled the sphere backwards out of the collision. Now the **Sphere** will move through the **Torus** as it spins open at 180 degrees. You may also consider deleting keyframes that already exist which may be causing a speed increase/decrease of your object due to this change.



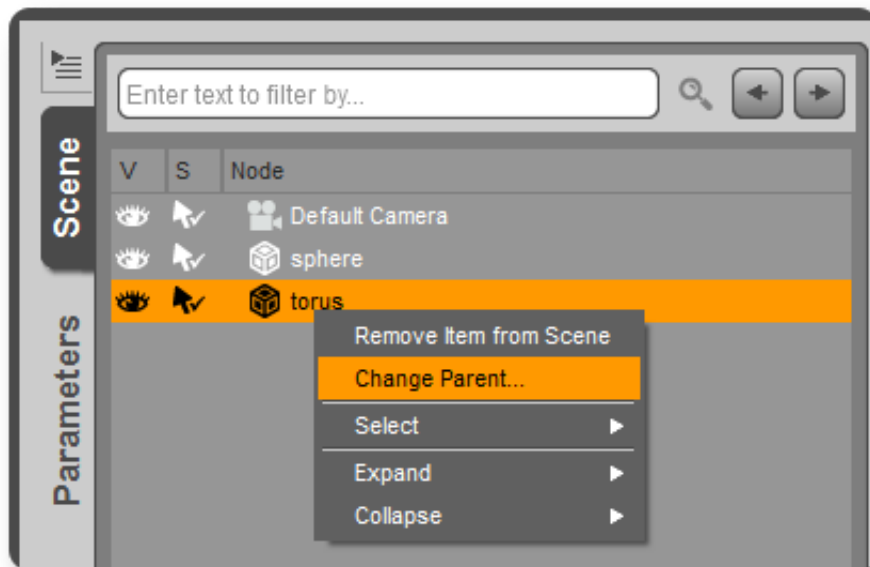
# Parenting

It's now time to talk about another interaction between two objects...**Parenting**.

Be sure to return your animation to the beginning with the Skip To Start button. Now select your **Torus** object in the **Scene** tab.

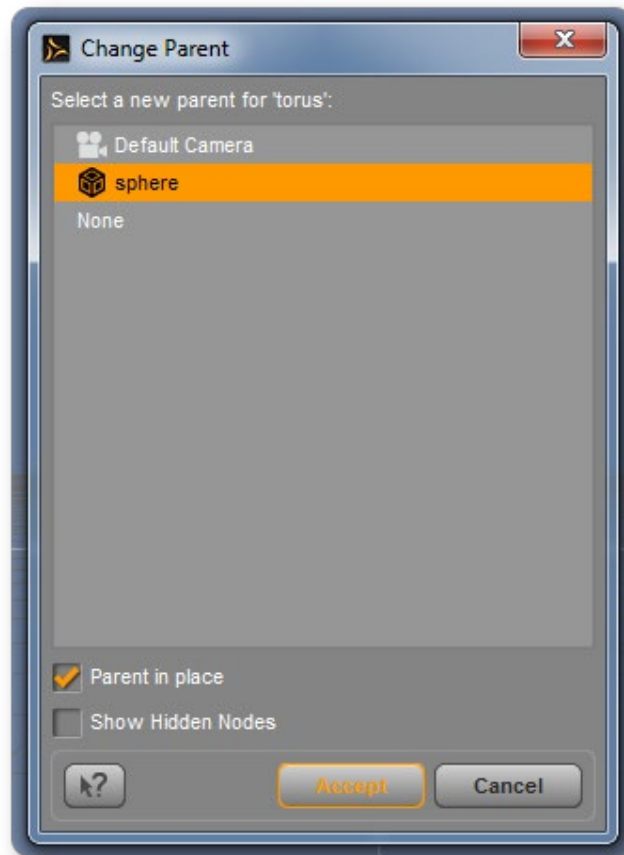


Then **right-click** on it to get a menu. Select '**Change Parent...**'.

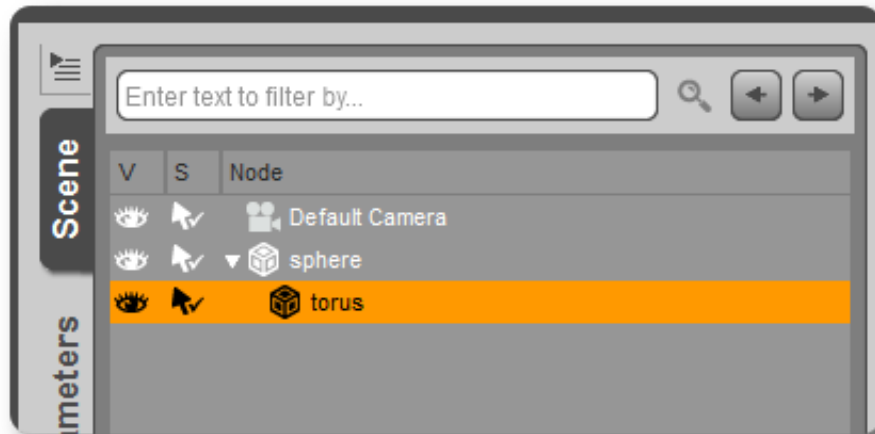




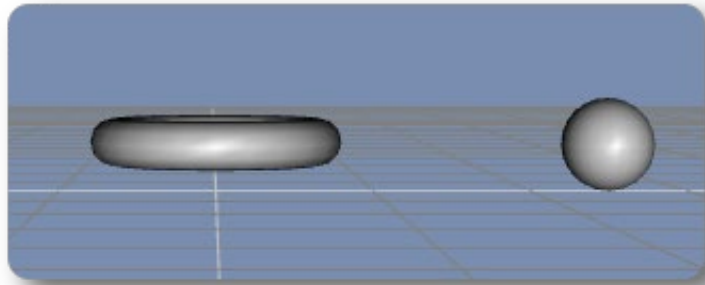
Select '**sphere**' and click '**Accept**'.



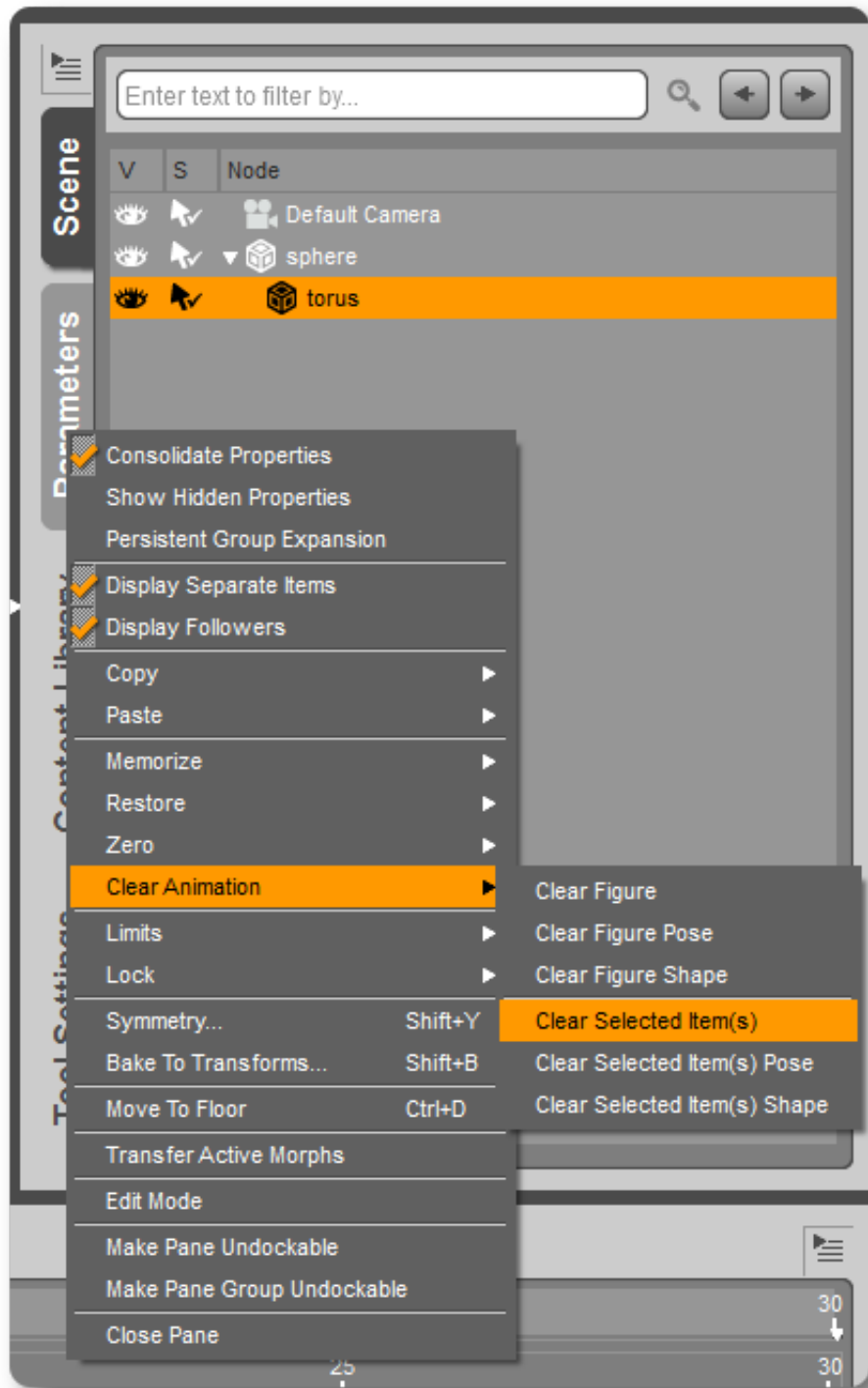
The '**torus**' will now show-up indented underneath '**sphere**', signifying '**sphere**' is its **Parent** in the scene hierarchy



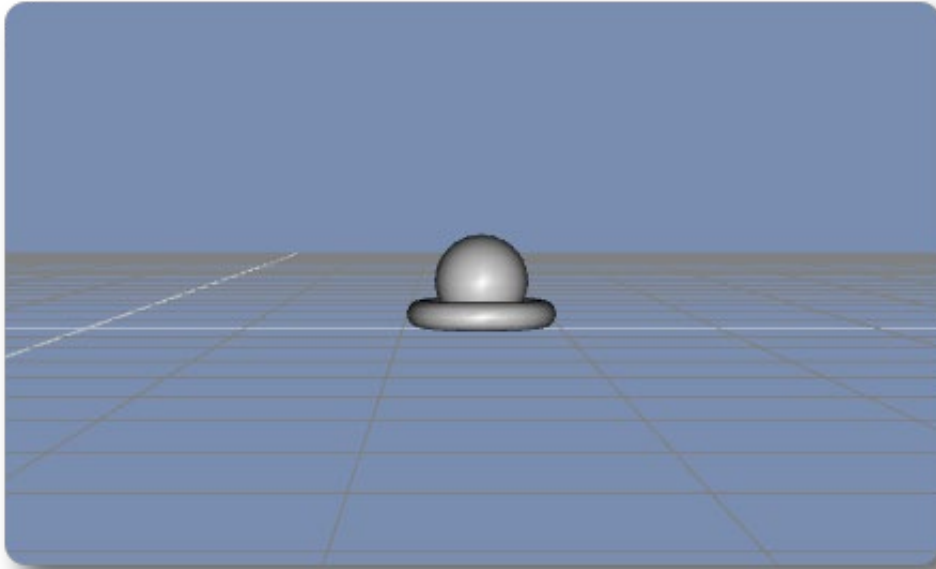
Initially, once we change the **Parent** of **Torus**, nothing will seem to happen.



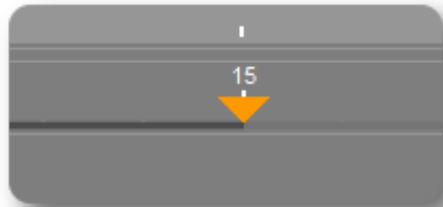
That's only because we had previous keyframes added to **Torus**. If we **Clear Animation** for **Torus** using *Edit / Figure* or *Edit / Object* on the main menu...



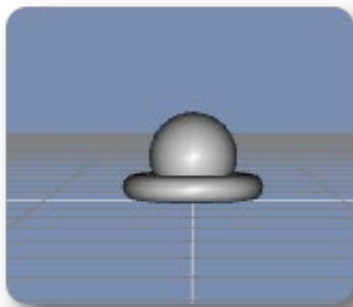
...the **Torus** will snap to **Sphere**'s base.



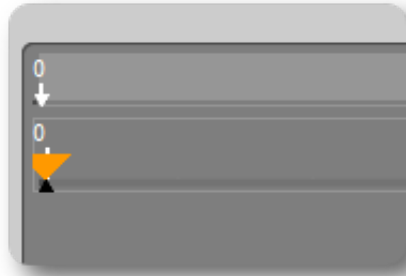
Be sure to select the **Sphere** in the Scene tab. If we move to a different frame, such as Frame 15...



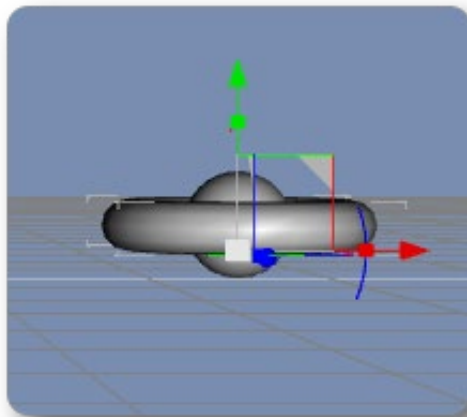
...you'll see the **Torus** (which does not have any keyframes) follows the **Sphere**.



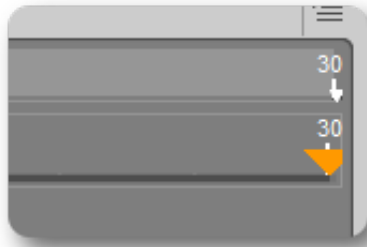
Let's make the **Torus** spin, but this time spin around the **Sphere**. Go to **Frame 0**.



Select the **Torus** in the Scene tab. Resize the **Torus** and move it to the center on the **Sphere**. Create your new keyframe.



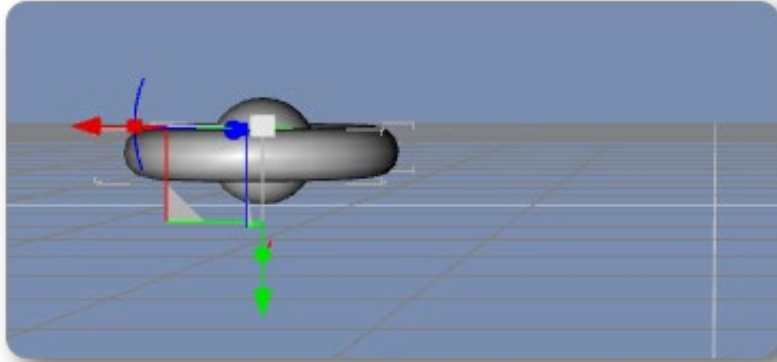
Go to **Frame 30**.



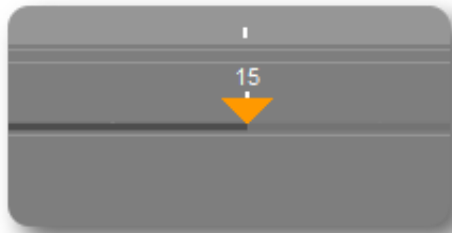
Set the **Z Rotate** to **180.00**.



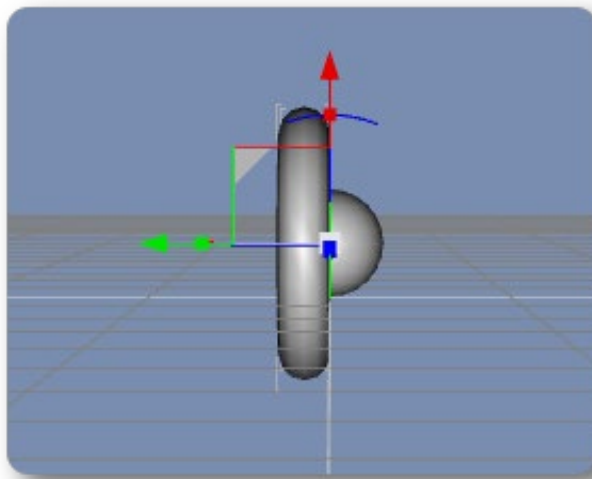
Once again, center the **Torus** vertically on the **Sphere**. Create your keyframe.



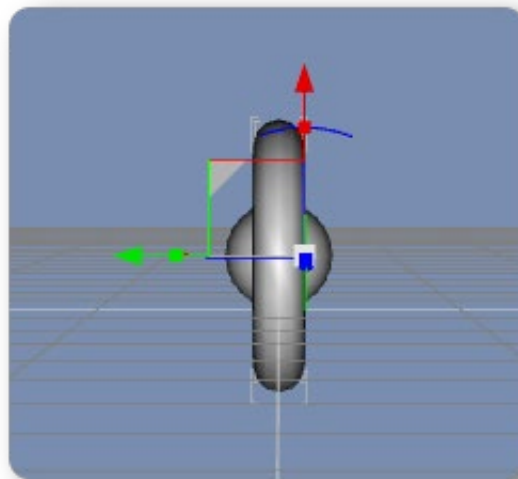
Go to **Frame 15**.



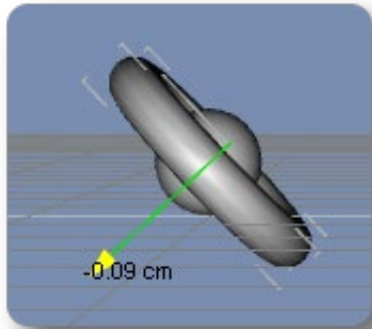
Our **Frame 15** is offset.



So one more time, center the **Torus** and create your keyframe.



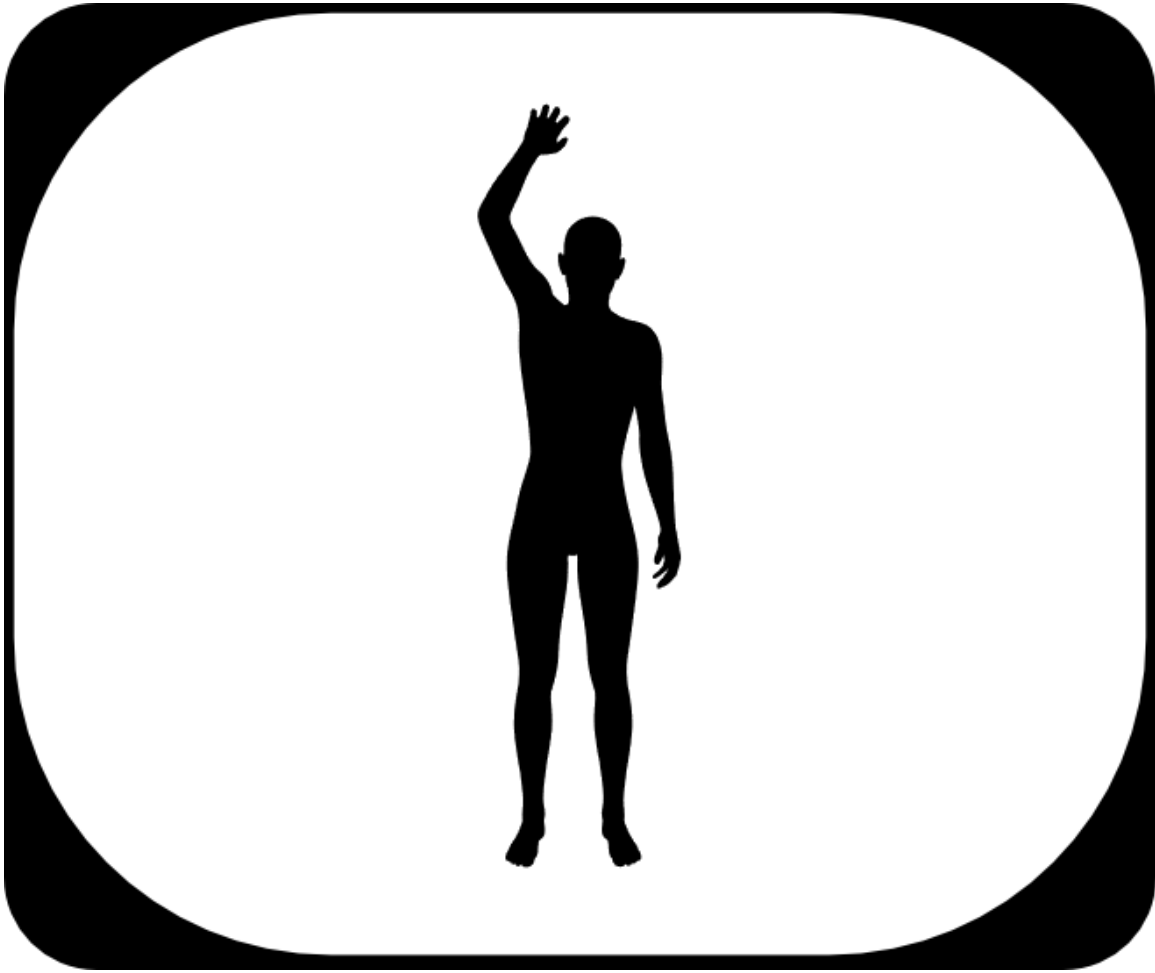
If there are any frames where the Torus seems offset, go ahead and fix them.



Now when you play the animation you should see the **Sphere** going from right to left, the **Torus** sticking with the **Sphere**, and the **Torus** spinning around the **Sphere** as they both move

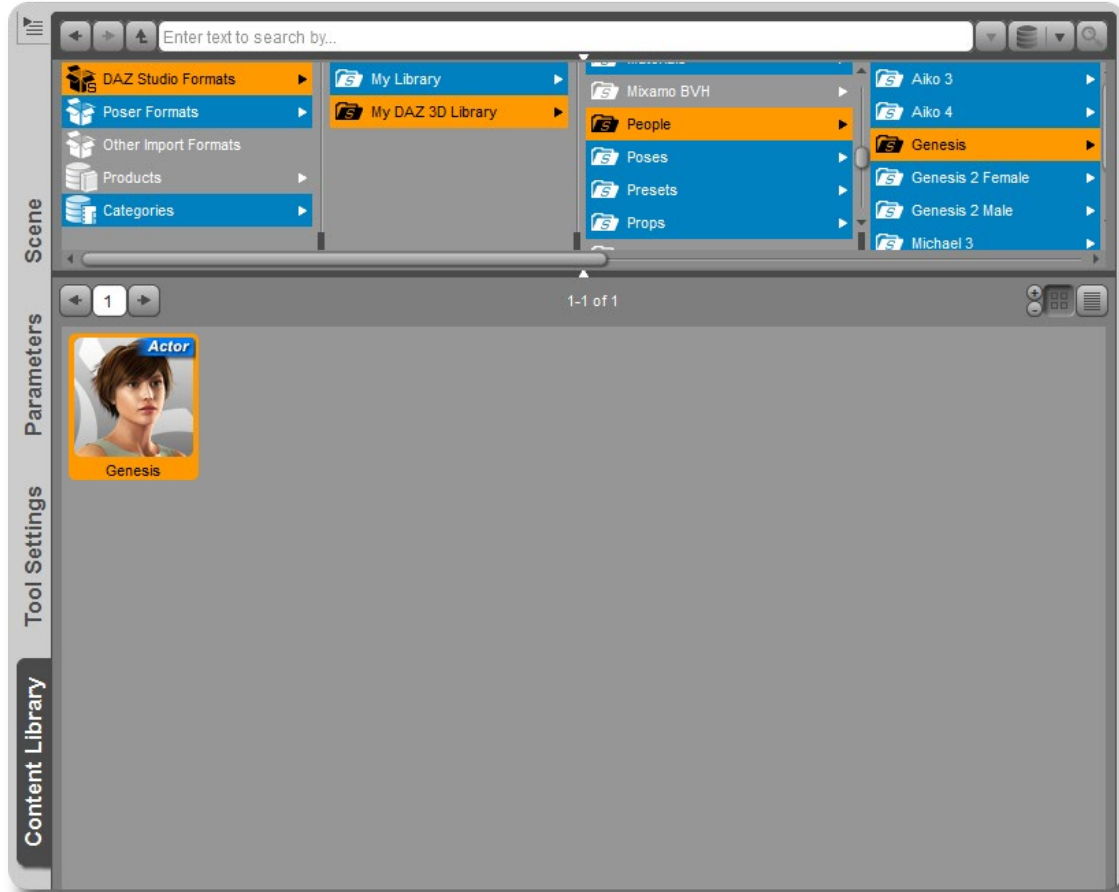


# Chapter 6: Animating Figures

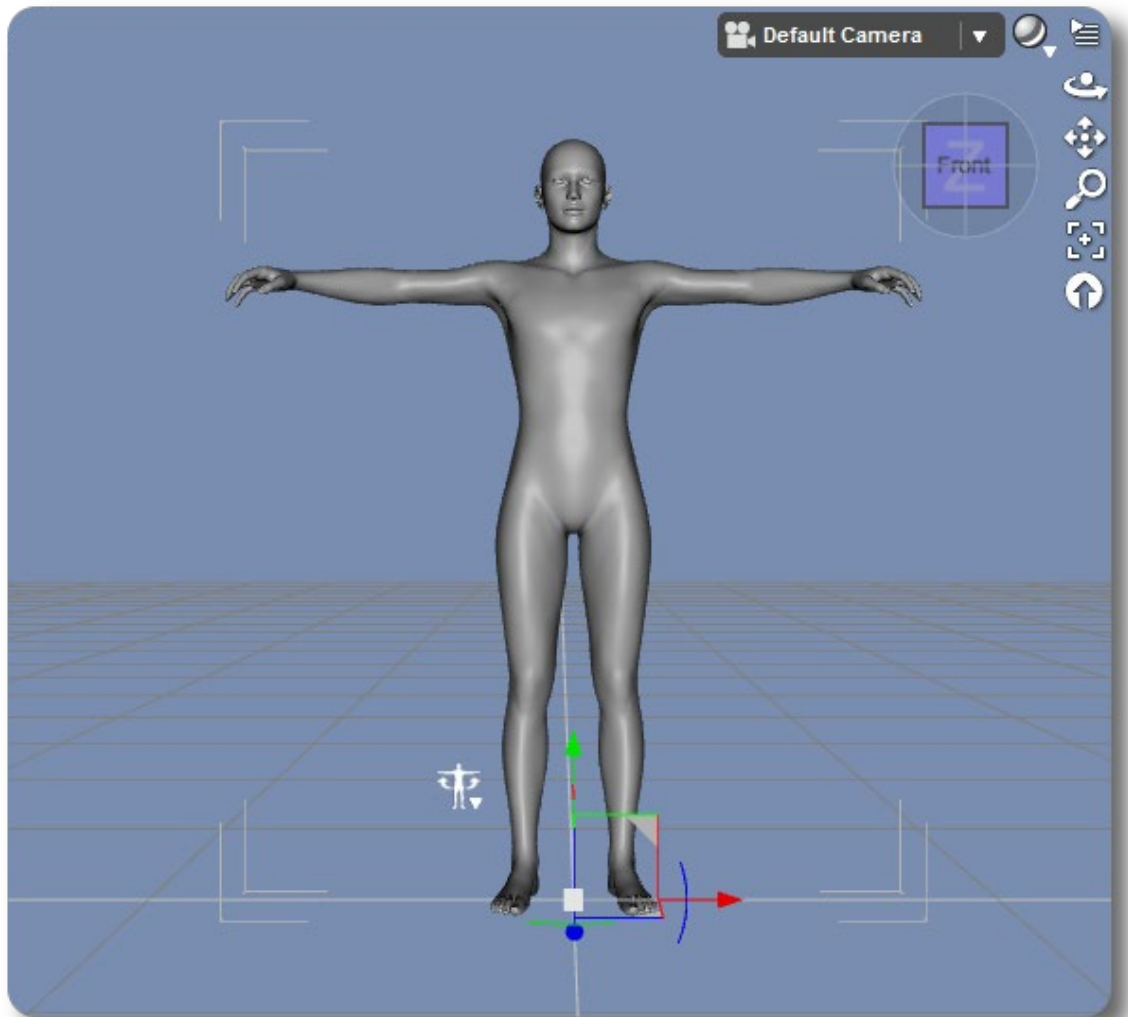


The last thing I want to show in our basics of animation is how to animate a figure.

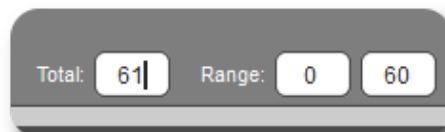
Find a figure to work on, I chose **Genesis**.



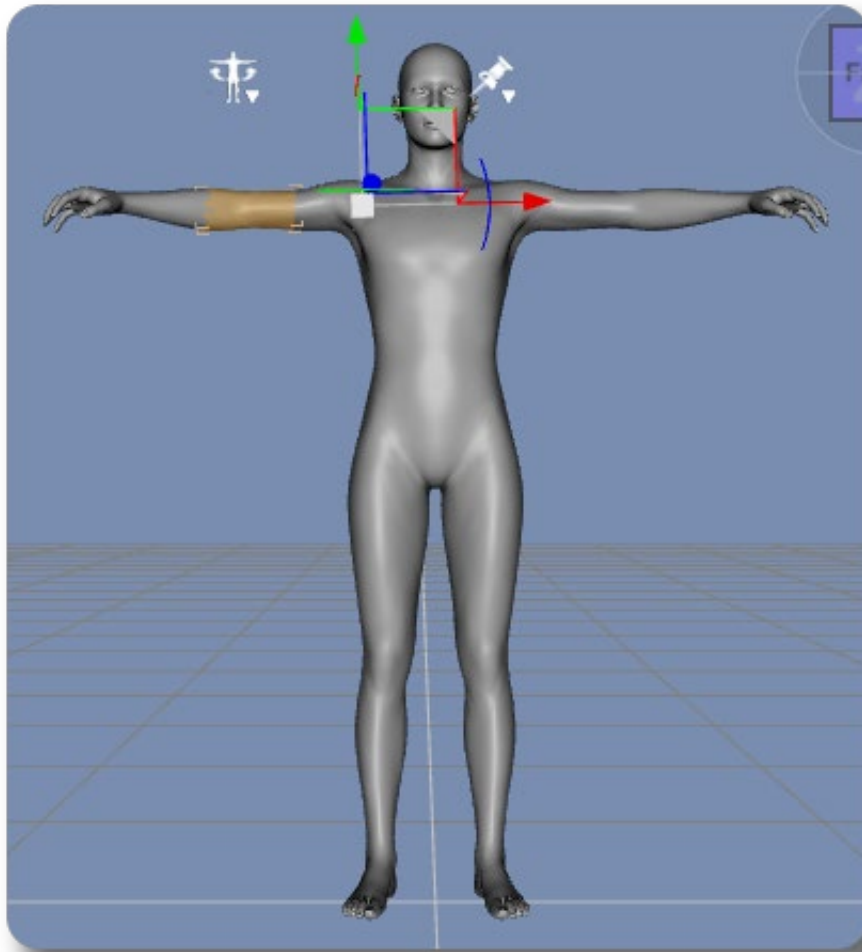
We are going to have this figure make an exaggerated wave.



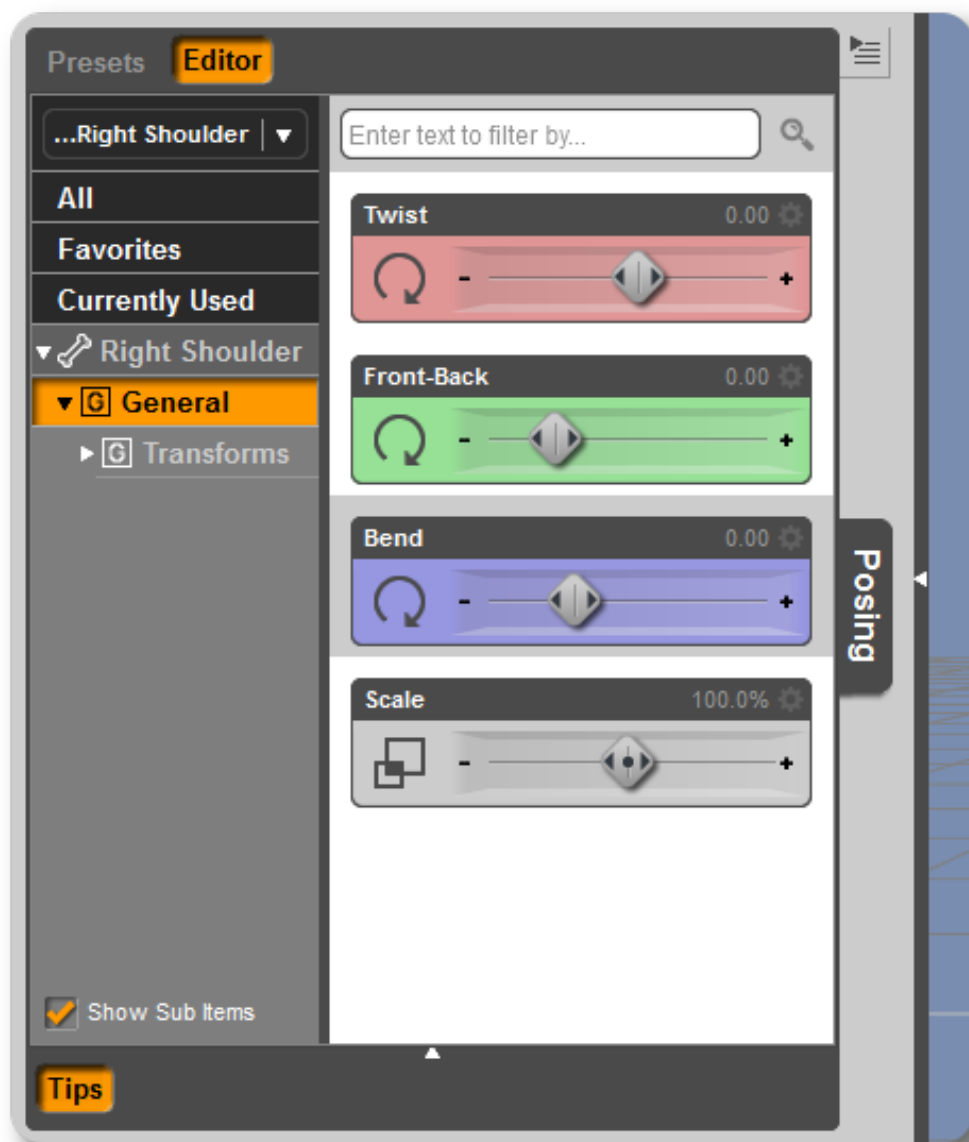
First off, we are going to be needing more than the default amount of frames. Set the total frames to **61** by clicking in the Total field and typing 61.



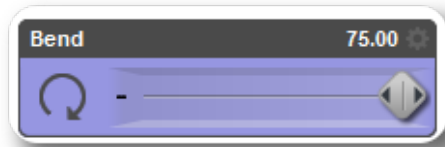
Select the **Right Shoulder** of your figure in the Viewport or by using expanding the figure in the Scene tab and selecting Right Shoulder there.



If you look at the **Posing** tab, you'll see a variety of controls to change the position of your figure's body parts.



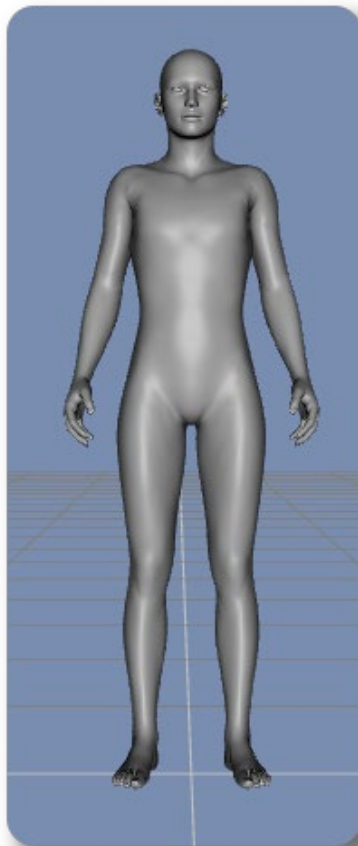
We want to bend the **Right Shoulder** to maximum value bringing it down by the side of the Genesis figure.



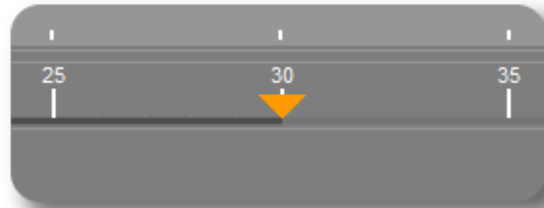
Select the **Left Shoulder** and do the same, but for this one use the minimum value to bring it down by the side.



Now that the figure has both arms down at the sides, set **Frame 0** as a keyframe.



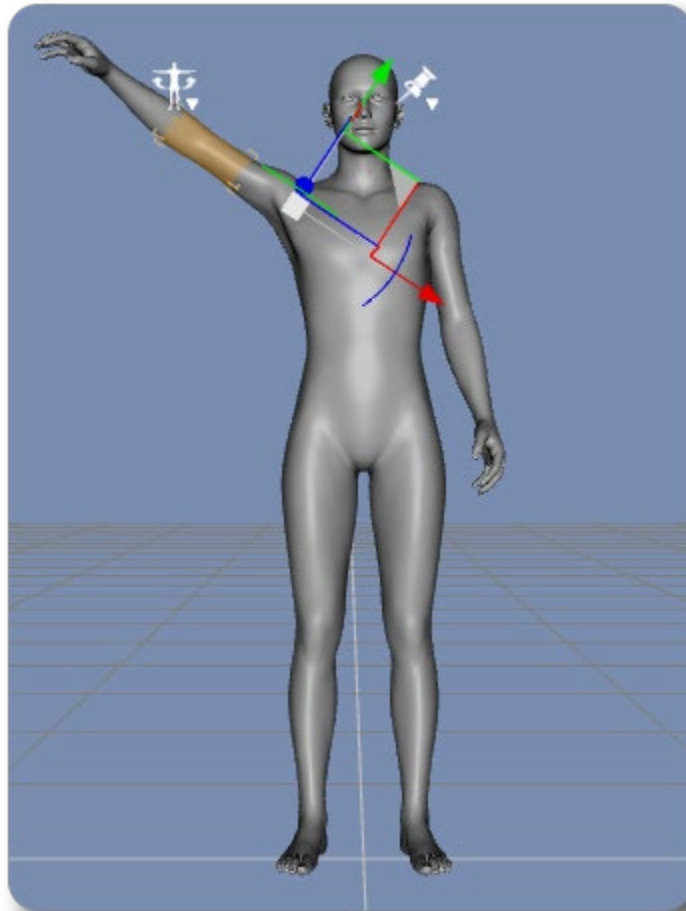
Go to **Frame 30**.



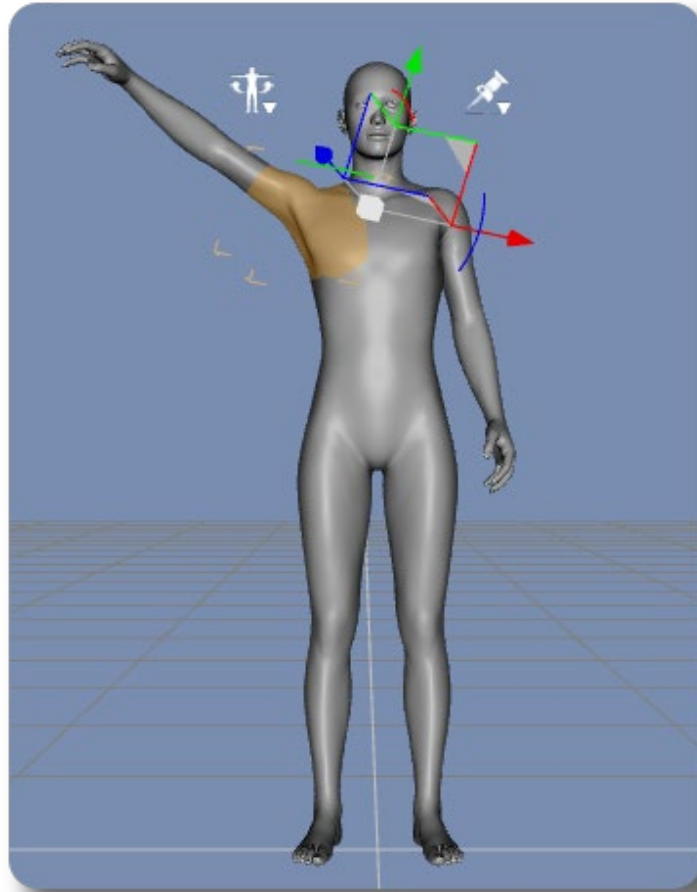
Set the **Right Shoulder** to bend it's max the other direction.



It should look something similar to this.



Now select the **Right Collar**.

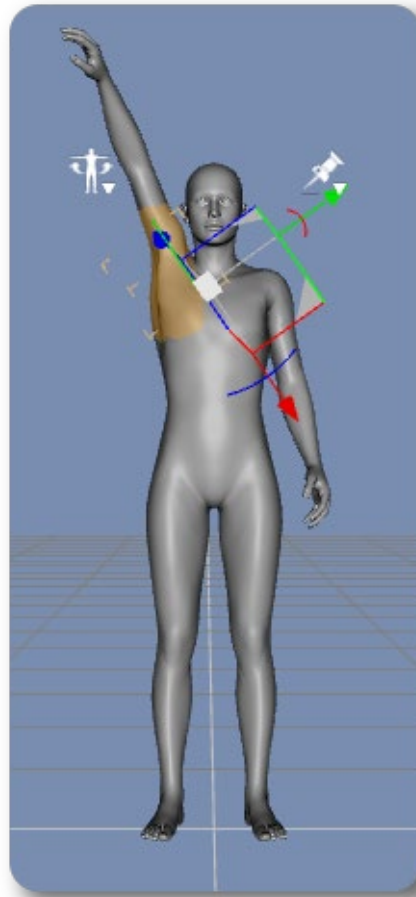


Bend the **Right Collar** to its minimum bringing it towards the neck.





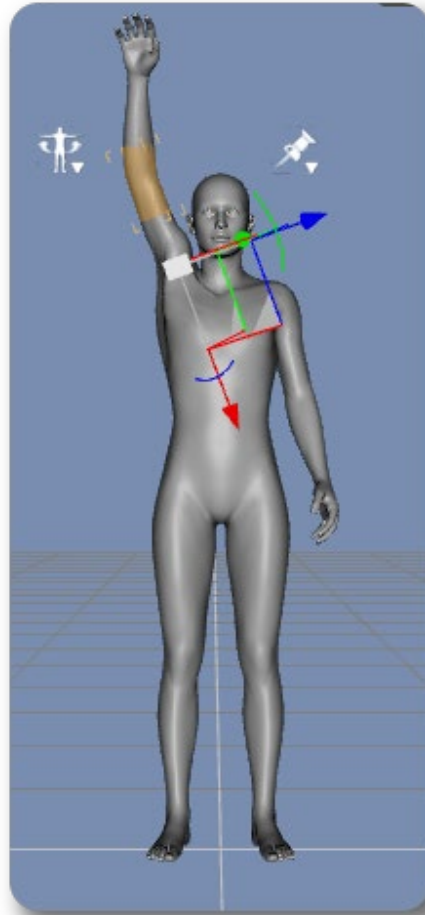
It may look silly at the moment, but that will change.



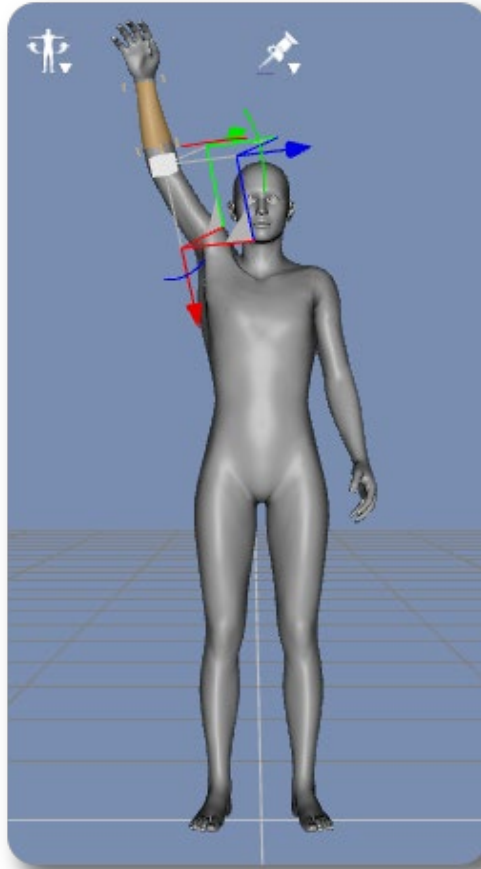
Once again select the **Right Shoulder**. This time **Twist** it to the limits in the direction where the palm is facing towards you.



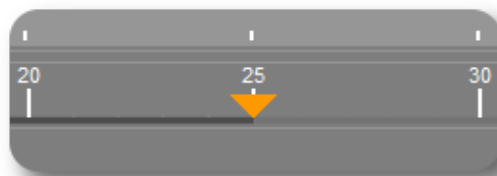
Now it's starting to look more like a waving position.



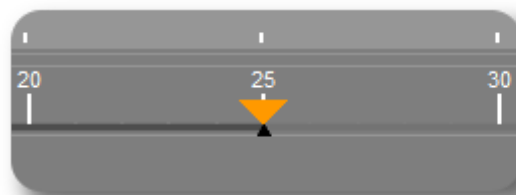
Now select the **Right Forearm**.



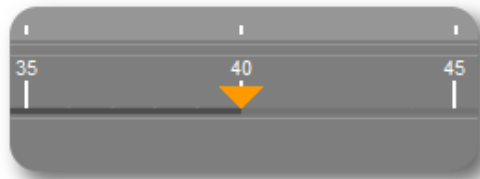
Go to **Frame 25**.



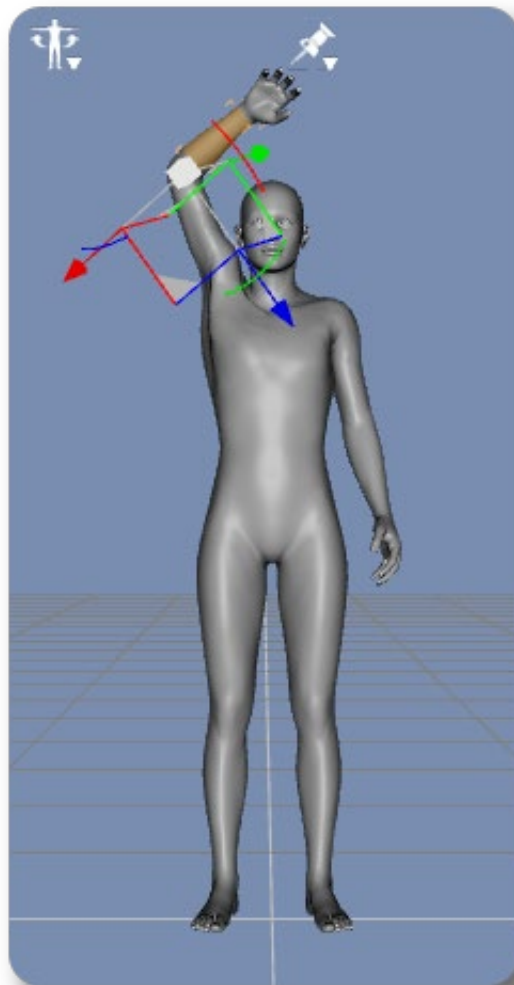
Create a keyframe here. This will give us a base keyframe for our forearm.



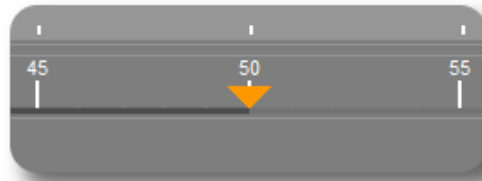
Go to **Frame 40**.



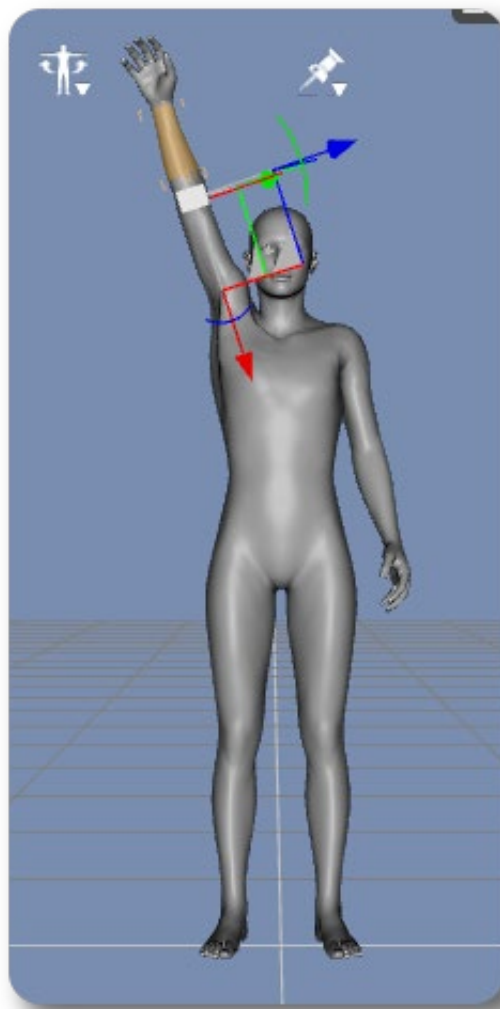
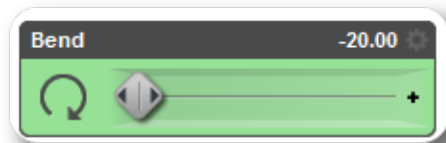
Now bend the **Right Forearm** somewhat, towards the figure's head. This will be a part of the actual waving motion.



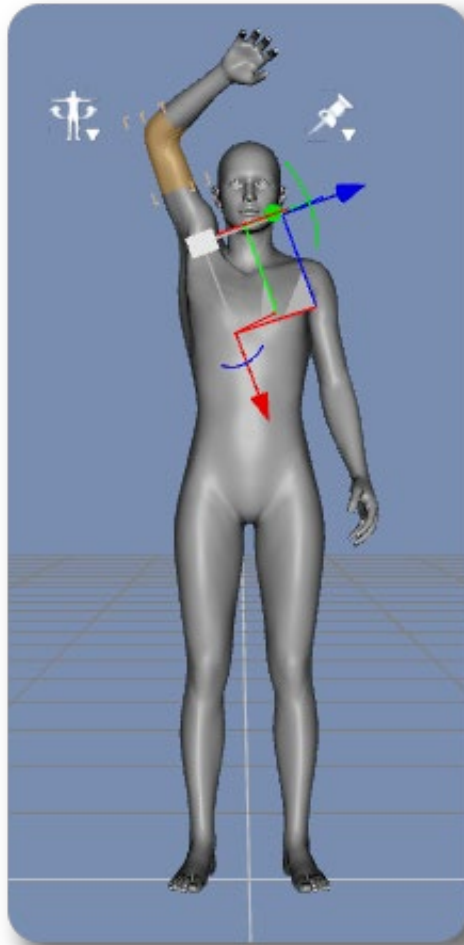
Go to **Frame 50**.



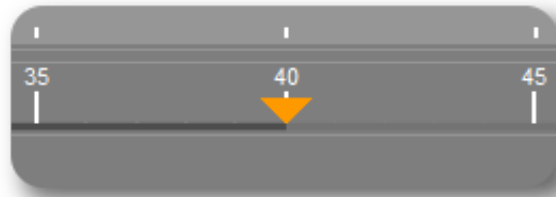
Set the **Right Forearm** to bend back to where the forearm is straight with the rest of the arm. This will be the end of the actual waving motion.



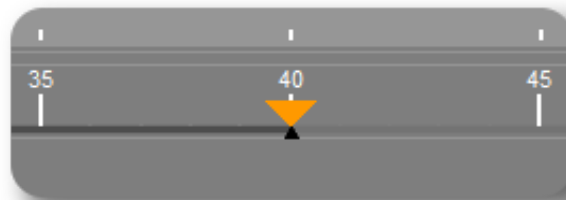
Select the **Right Shoulder** again.



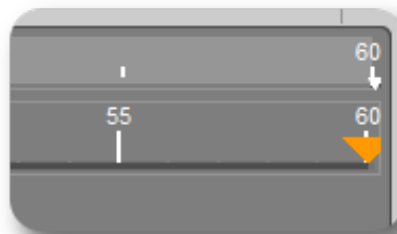
Go to **Frame 40**.



Create a base keyframe here.



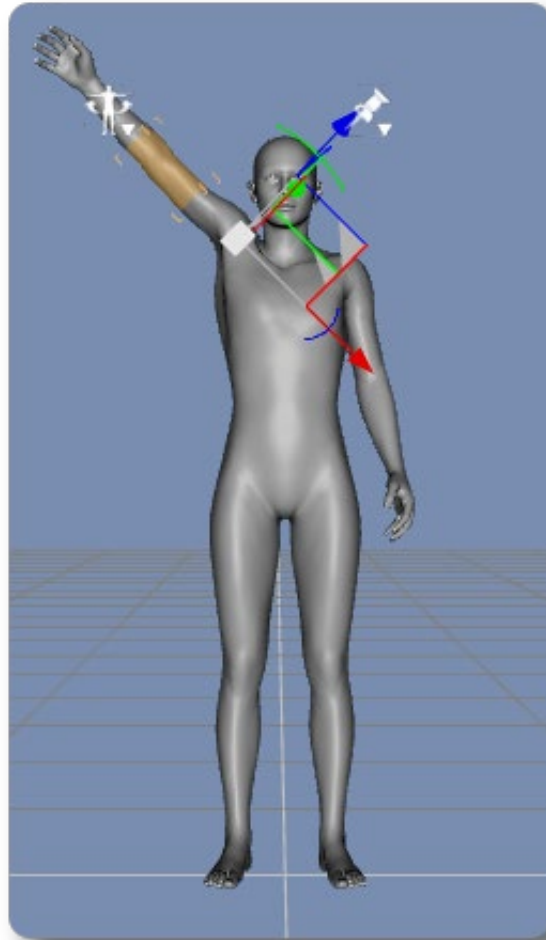
Go to **Frame 60**.



Bend the **Right Shoulder** back down somewhat, towards the body.



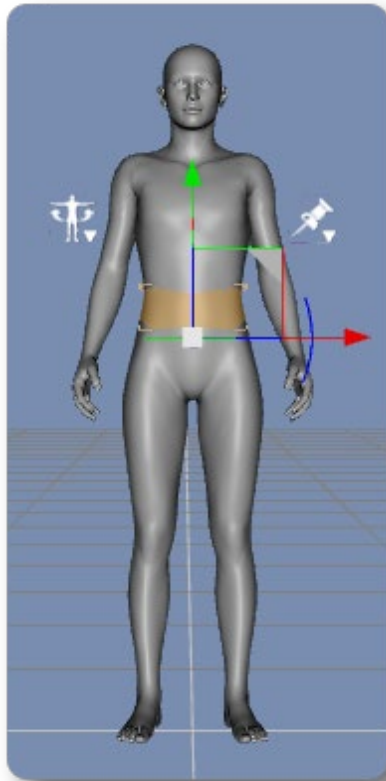
The idea here is to have the **Right Shoulder** start to head back down a bit once the forearm has finished it's wave.



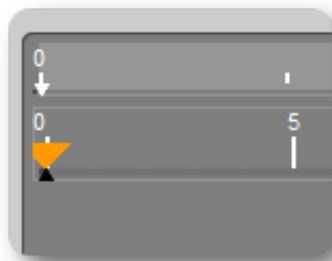
You can test our animation progress so far with the **Play/Pause** button. Once you are satisfied, be sure to use the **Skip To Start** button to rewind to beginning.



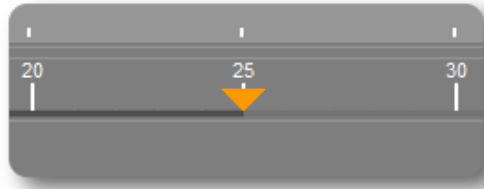
Now let's get the torso to move a little bit, so our figure is less stiff in the animation. Select the **Abdomen**.



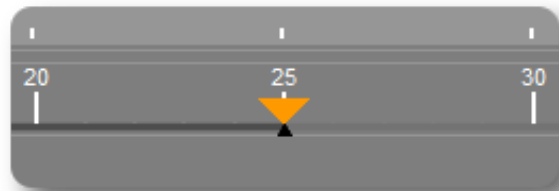
Create a base keyframe at **Frame 0**.



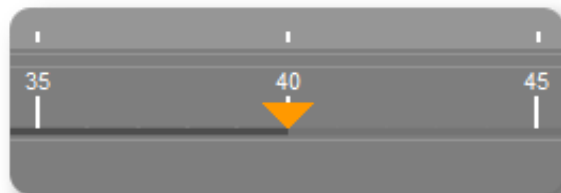
Go to **Frame 25**.



Create a base keyframe here too, since this is where the torso will actually start to move.



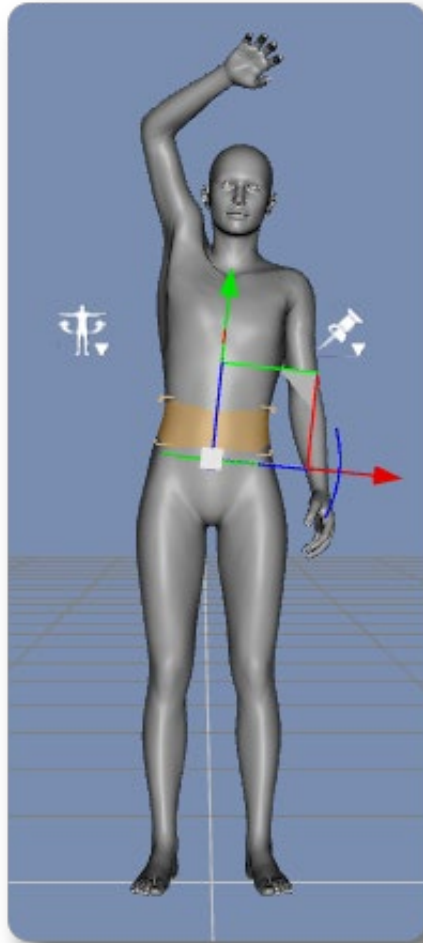
Go to **Frame 40**.



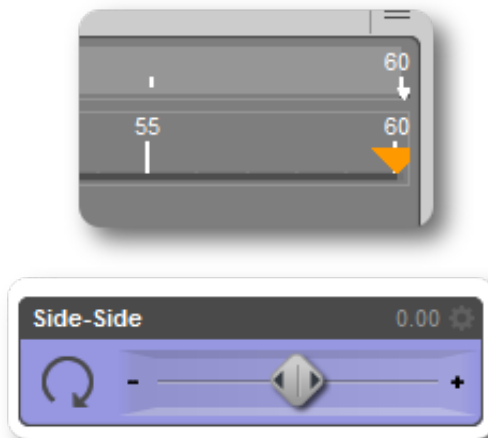
Make the Abdomen move with the wave by moving it **Side-Side**.



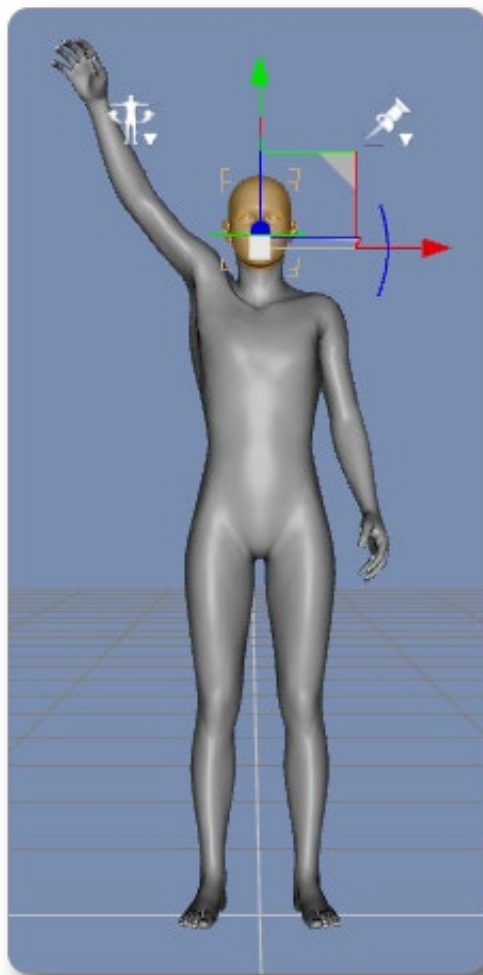
Now at the end of the first waving motion, the torso moves with the arm.



Go to **Frame 60**. We need to set the **Abdomen** back to its default position so it moves back to normal as the wave completes.



Now select the **Head**.



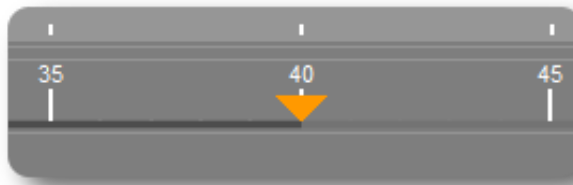
Go to **Frame 25**.



Create a base keyframe here.



Go to **Frame 40**.

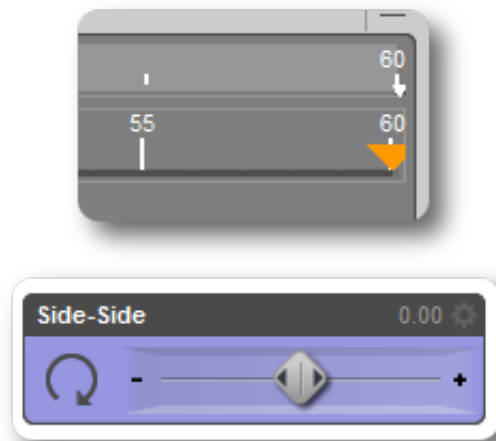


Move the head **Side-Side** somewhat in the motion of the wave. Even slight movements that aren't directly noticeable can create subtle impacts to your animation. So the more you want it noticed, make the value higher. I just barely moved it in this case since it isn't as important.

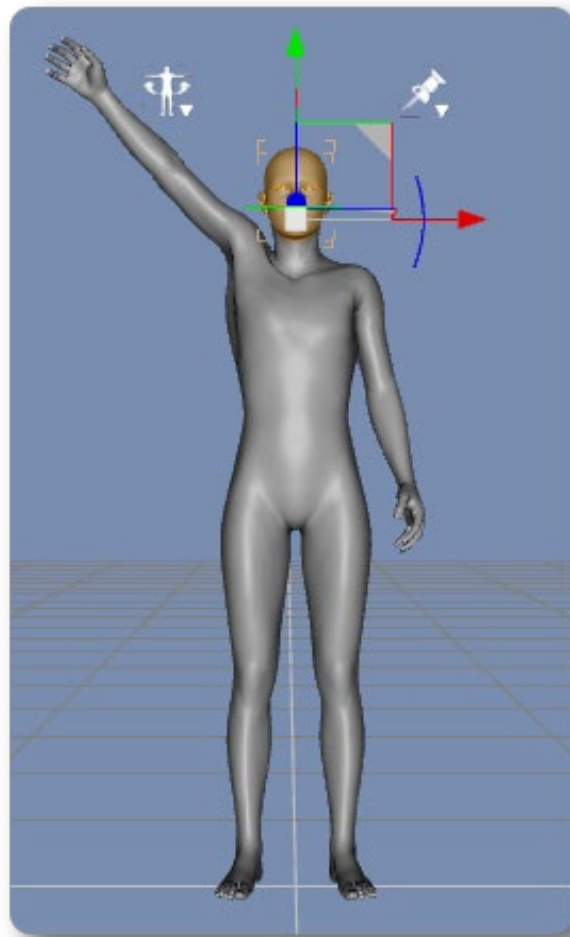




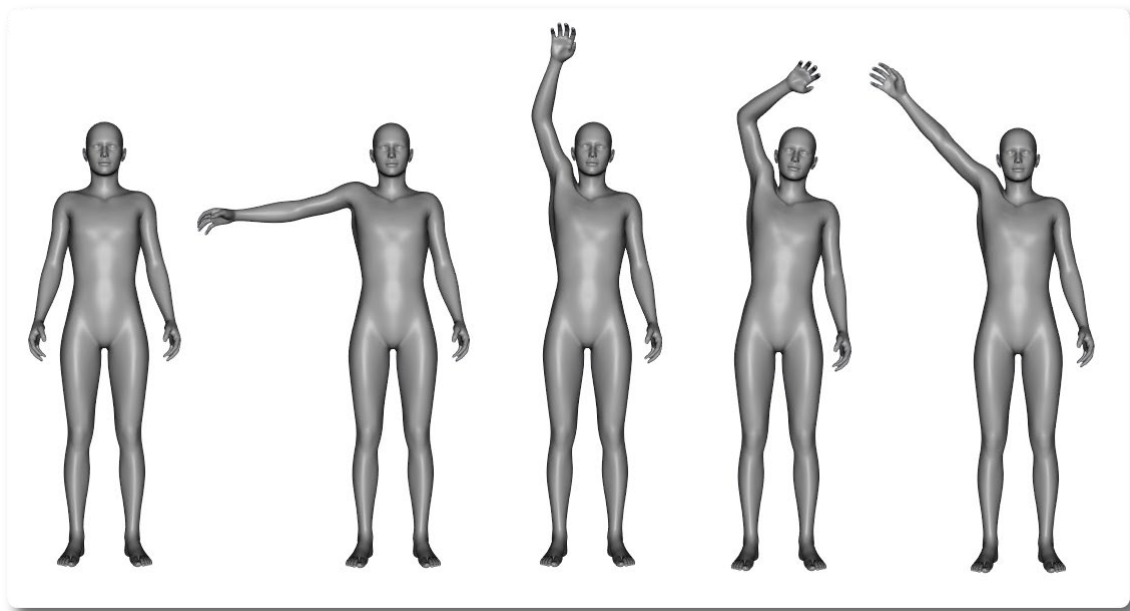
Go to **Frame 60** and set the **Head** back to it's default position for the end of the wave.



Now as the wave finishes, the **Head** goes back to normal.



This example shows the interaction between objects and their Timelines. Realize that a lot of the objects we moved were parented to other's, which made it so we didn't have to move things like the hand, since it moved with the shoulder and forearm. Also look at **Frame 30**. At this frame we set the **Right Shoulder** to stop its motion. At this time we wanted our forearm to start it's waving motion. BUT, instead of starting the forearm motion at **Frame 30**, we started the motion at **Frame 25**. This is because in the beginning of an animation of an object, it has a slow startup, so to make it more fluid we start it earlier. Like in this example, animate each object separately through the animation a step and frame at a time. This will not only make it easier on yourself, but create a much more fluid animation since you will be making decisions based on other object's current positions.



With that, you should have a decent start to an exaggerated waving animation. Obviously there are some things that can be modified such as the fingers being straight and maybe even facial expressions, but that's for you to decide...



# Conclusion

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You have now learned much of the basics of animating in DAZ Studio, you should be able to take what I showed here from the technical to the various practicing. It's time you started animating your own objects and create something fun. The waving animation we made wasn't just for an example, but to wave goodbye to you and wish you GOOD LUCK!



*Good-Bye (for now)*