

The Principles of Animation

Solid Drawing: Lesson 11

Understanding the Principle of Solid Drawing

The principle of solid drawing means to draw animations well using the fundamentals of traditional art, including composition, balance, form, anatomy, weight, volume, proportions, light, shadow, etc. Creating well-drawn characters, objects and scenes help create the illusion of life in an animation. Although animation software has made it possible for animators to animate without having to create images from scratch, it is still important to have a general understanding of these concepts and apply them to your animations.

Related Project Files

The following related project files are located in the ASCurriculum-Lesson11.zip file that accompanies this course:

- **Tutorial 11.1.anme** - A final version of the project that you will complete in this lesson.
- **Tutorial 11.1 How To.mov** - A step-by-step video tutorial of the project that you will complete in this lesson.

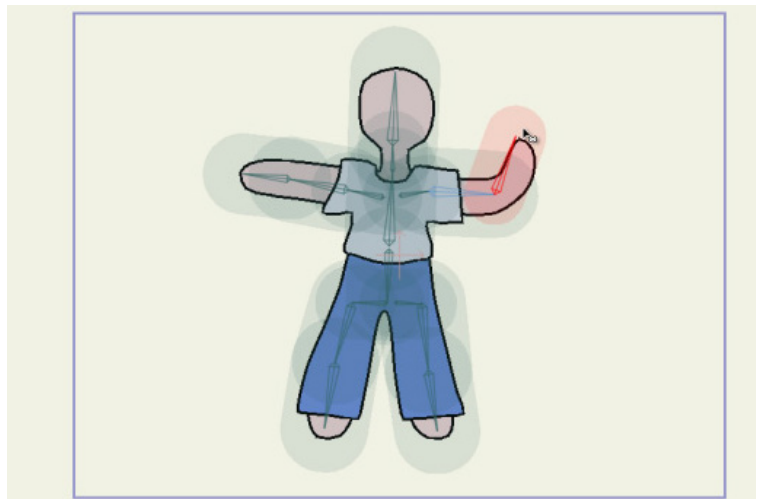
Tools Used

- **Add Bone** tool, **Add Point** tool, **Curvature** tool, **Manipulate Bones** tool, **Select Bone** tool, **Translate Points** tool, **Select Points** tool, **Bone Strength** tool

Tutorial 11: Overview

In this lesson you'll practice solid drawing by drawing a simple cartoon character. As you draw, try to create a figure that maintains realistic proportions, anatomy, balance and form. After you draw your character, you'll learn how to create a rigging system so you can easily manipulate his bones and animate him.

Optional: You may want to import a mouth from the Library (Library > Mouths) and Jill Eyes.anme (Jill Eyes.anme can be found in the Lesson 3.1 files) to add more life to this character by giving him facial features.



Tutorial 11: Step-by-Step

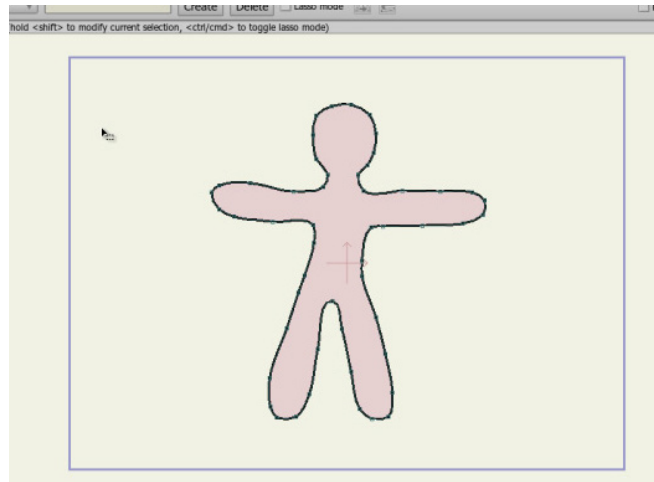
Step 1: Draw a Simple Figure

To begin, go to **File > New** to open a new Anime Studio document. Start by using the **Style** window to select a flesh color.



Choose the **Add Point** tool and make sure that **Auto Weld** and **Auto Fill** are checked. Draw a simple character on the scene, making sure that at the end you close the shape so that the character will fill with the flesh color. The character can be as detailed or as simple as you like, but add the head, neck, arms and legs at a minimum.

Save your project at this point, naming it Lesson11_YourLastName.



For further information on the **Add Point** tool, refer to the Anime Studio Debut Users Manual.

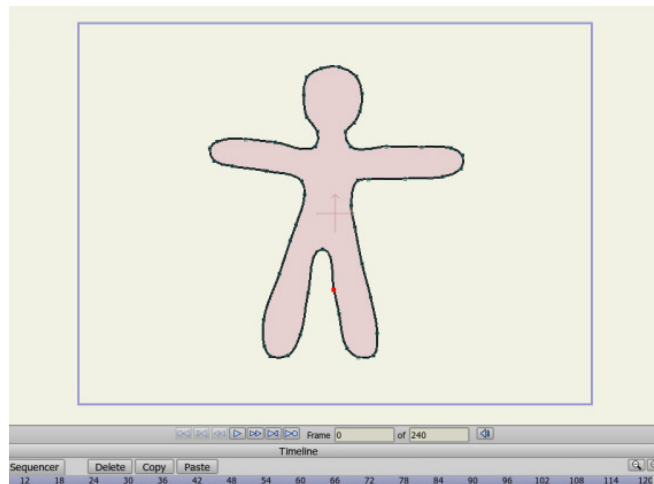
Step 2: Adjusting the Shape



To refine the shape of the character, choose the **Select Points** tool and click outside the character to deselect all of the points.



Then use the **Translate Points** tool to tweak the shape of the character as you like.



For further information on the **Select Points** tool, refer to the Anime Studio Debut Users Manual.

For further information on the **Translate Points** tool, refer to the Anime Studio Debut Users Manual.

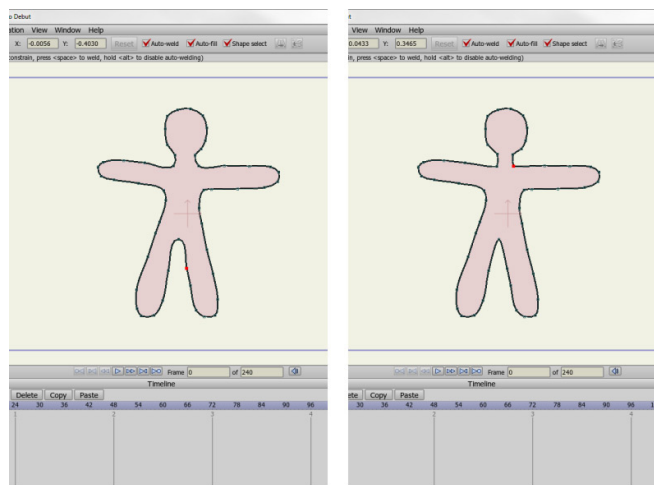
Step 3: Adjusting Point Curves



Another useful tool is the **Curvature** tool, which allows you to sharpen or relax the curves around a point. Choose the **Curvature** tool from the **Draw** section of the toolbox. Click to select a point that you want to adjust, and then drag left to make the curve sharper or right to relax the curve even more. Here we'll use the **Curvature** tool to define the neck of the character.



Then use the **Translate Points** tool to reshape the neck.

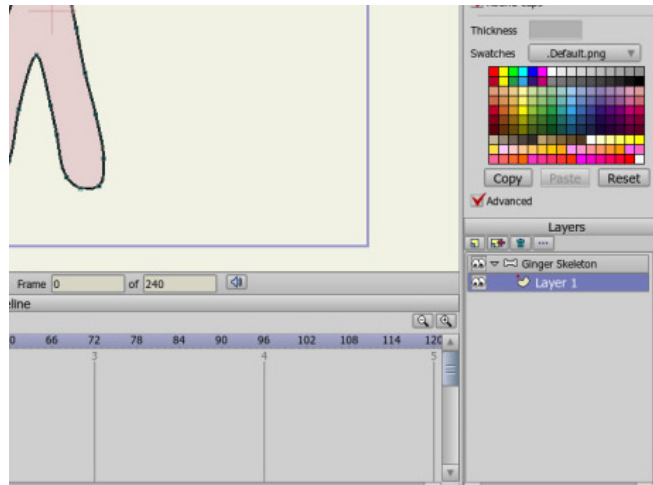


For further information on the **Curvature** tool, refer to the Anime Studio Debut Users Manual.

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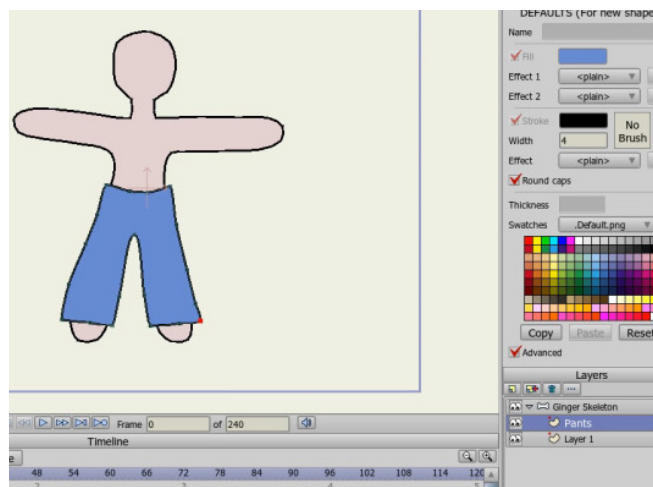
Step 4: Create a Bone Layer

To create the skeleton, create a new **Bone** layer in the **Layers** panel. Double-click the new **Bone** layer and rename it to **Ginger Skeleton**. Then drag **Layer 1** (your character) into the skeleton layer.



Step 5: Adding a New Layer in the Bone Layer

Next we'll add additional layers to the character to give it some clothing. Create a new **Vector** layer and name it **Pants**. Make sure that it's positioned above the **Layer 1** layer and nested in the **Skeleton** layer. As long as the layers are nested inside the Ginger Skeleton layer, then they will be affected by the bones. Select a color for the pants (such as blue).



Draw your pants over the character with the **Add Points** tool.

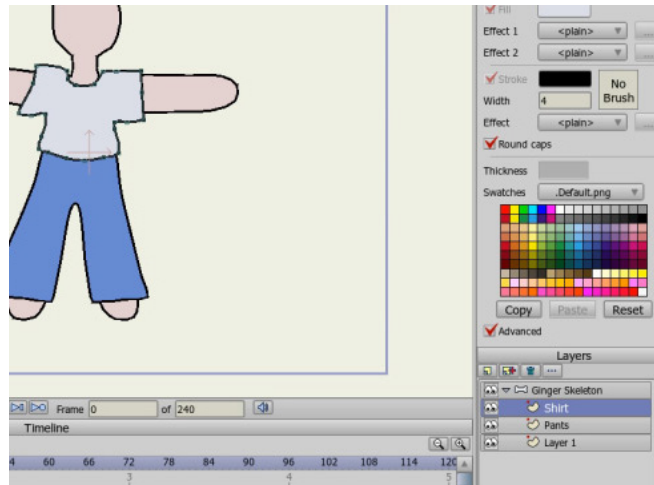


Use the **Translate Points** and **Curvature** tools to refine the shape of the pants. You can also select multiple points with the **Select Points** tool and then manipulate them with the **Curvature** tool to sharpen the bottom part of the pant legs.

Step 6: Adding Another New Layer in the Bone Layer



Create another new layer named **Shirt**. Draw the shirt on this layer with the **Add Points** tool. You can select a different fill color before or after the shape is drawn, but if you change the color after the shape is drawn make sure that the fill for the shirt is selected first.



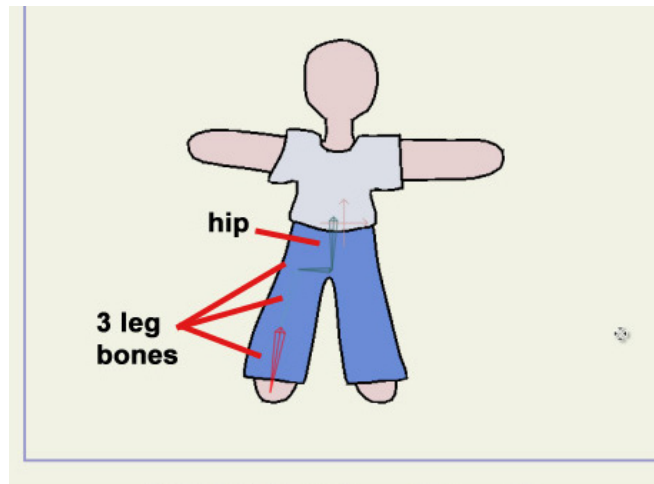
Again, use the **Translate Points** and **Curvature** tools to tweak the shape of the shirt.

Save your project at this point.

Step 7: Draw the Skeleton



To draw the skeleton, select the **Ginger Skeleton** layer in the **Layers** panel. Select the **Add Bones** tool in the **Bone** section of the toolbox. Start at the waist and drag a bone downward to create the hip bone. Click again at the top of the character's right leg to create another bone. Then click again at the knee and once more at the foot.



For further information on the **Add Bones** tool, refer to Anime Studio Debut Users Manual.

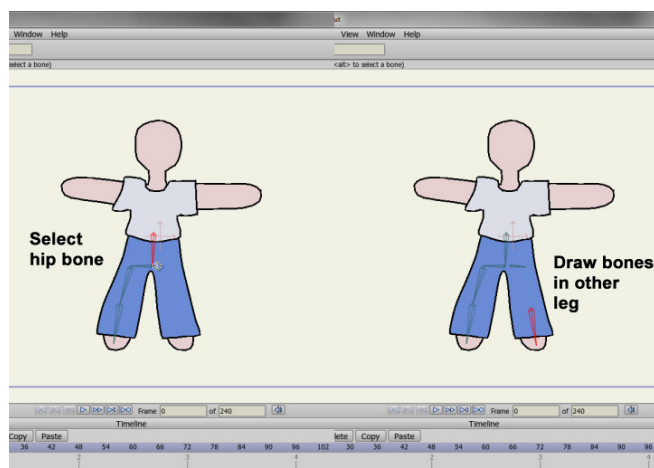
Step 8: Draw the Skeleton (continued)



To create the bones for the second leg, first use the **Select Bone** tool to reselect the first bone that you created (the hip bone).



Then switch to the **Add Bone** tool and draw bones for the left leg, similar to those you created for the right leg.



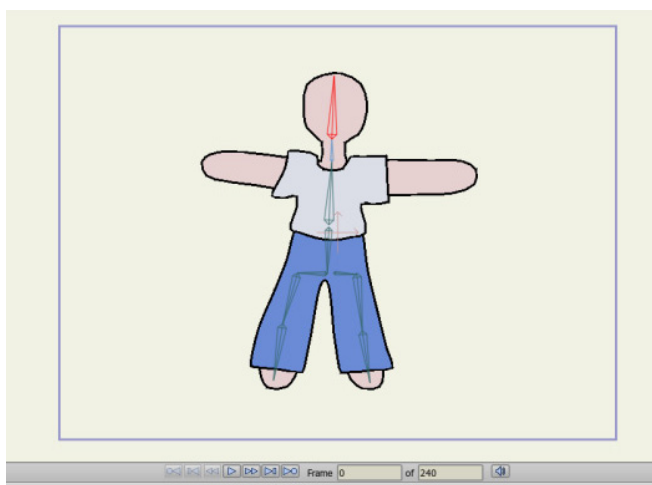
For further information on the **Select Bone** tool, refer to the Anime Studio Debut Users Manual.

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Step 9: Draw the Skeleton

(continued)

Again, use the **Select Bone** tool to select the hip bone you created. Then use the **Add Bone** tool to click at the base of the neck, the top of the neck and the top of the head.



Step 10: Draw the Skeleton

(continued)

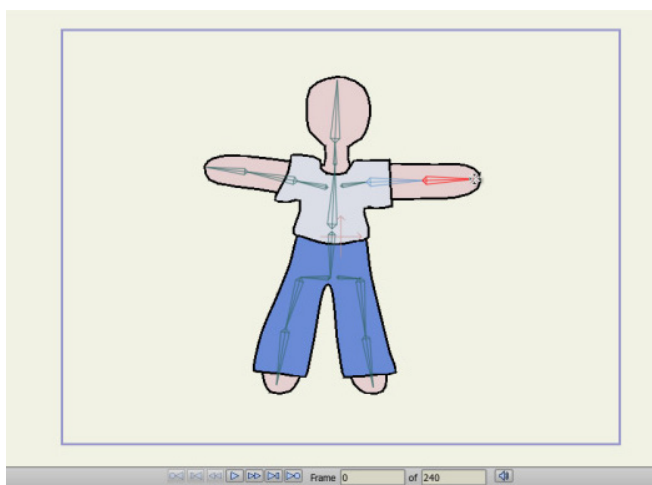


Now select the chest bone with the **Select Bones** tool. You'll use this bone as the root, or origin for the arms.



With the **Add Bone** tool, create three bones for the character's right arm, clicking first at the shoulder, then at the elbow and then at the end of the hand.

Select the chest bone again with the **Select Bones** tool to use as the root for the left arm. Then repeat the step above to create three bones for the left arm.



Step 11: Adjusting the Bone Strength



After all of the bones are created, you can switch to the **Bone Strength** tool in the **Bone** section of the toolbox. You can use this tool to increase or decrease the area that the bone affects. The currently selected bone is highlighted in red, while the unselected bones are highlighted in blue.

Click a bone with the **Bone Strength** tool and then drag left to decrease the amount of influence, or toward the right to increase the amount of influence.



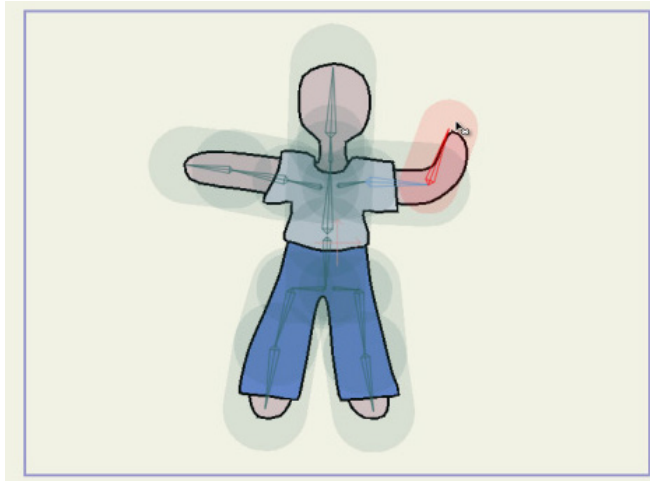
If you use the **Manipulate Bones** tool to rotate a bone first, you'll have a better idea of where the amount of influence should lie.

Switch between the **Manipulate Bones** tool and the **Bone Strength** tool to configure how each bone bends the underlying character.

Step 12: Rotating the Origin Bone

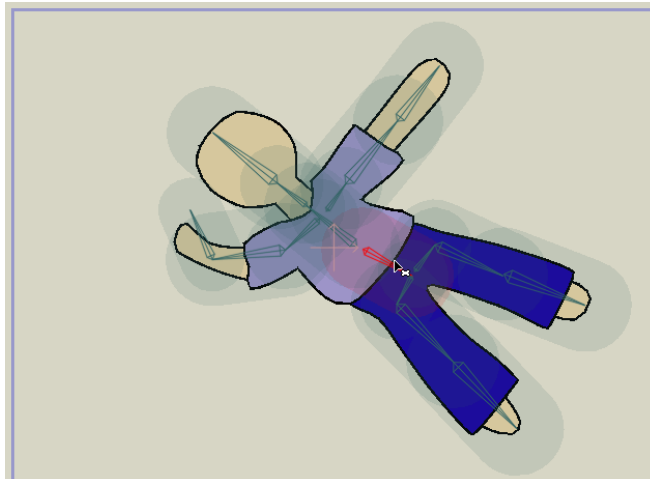


You'll notice that when you manipulate the hip bone (the original bone that you created) it will rotate or move the entire figure, since it is the main control point for the character.



For further information on the **Bone Strength** tool, refer to the Anime Studio Debut Users Manual.

For further information on the **Manipulate Bones** tool, refer to the Anime Studio Debut Users Manual.



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Step 13: Time to Animate

Now you get to show your skills as an animator by creating your own animation for this project. Move to any frame and manipulate your character's bones to any position of your choice. Keep advancing through the timeline by setting keyframes at various points in the timeline until you have at least five new positions. Manipulate your character at each frame until you are satisfied with the final animation. Then save your project and render your animation.