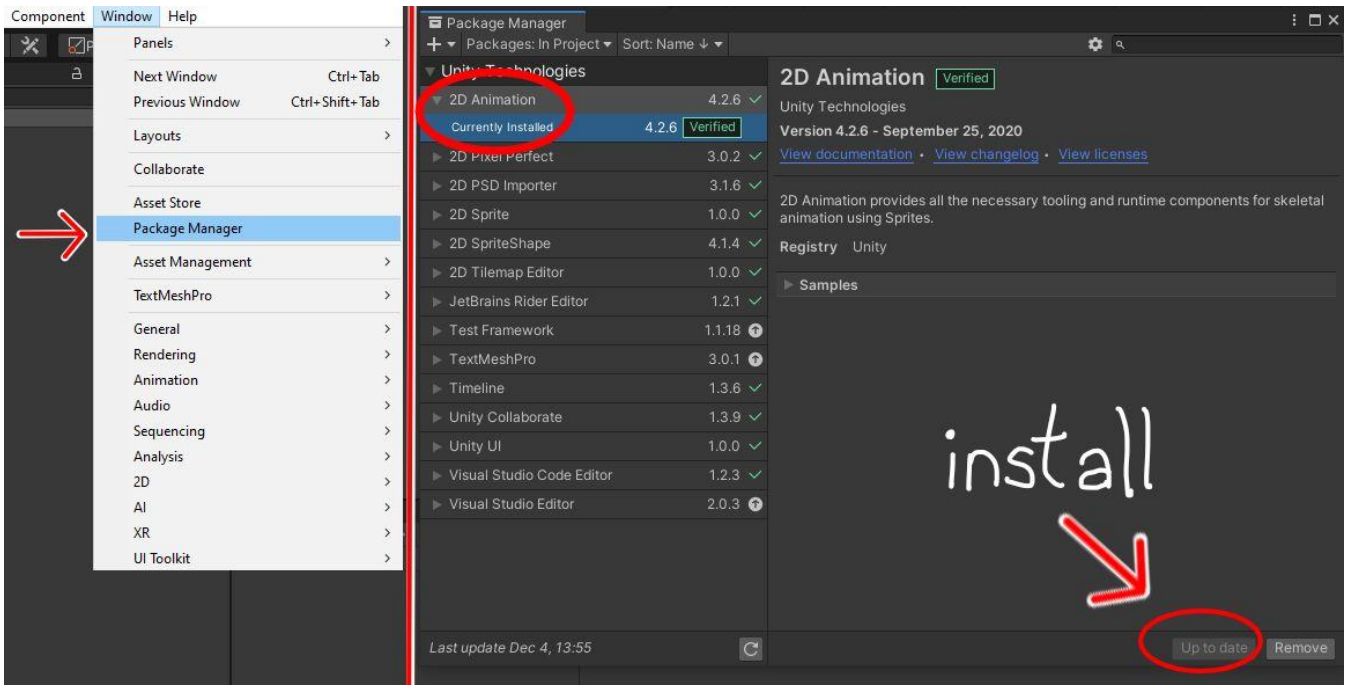
Rigging & Animation Guide ~By Charlie

1) In your digital art software of choice, create 2 versions of your asset, 1 fully assembled and 1 sprite sheet. Export both as psd (photoshop files).

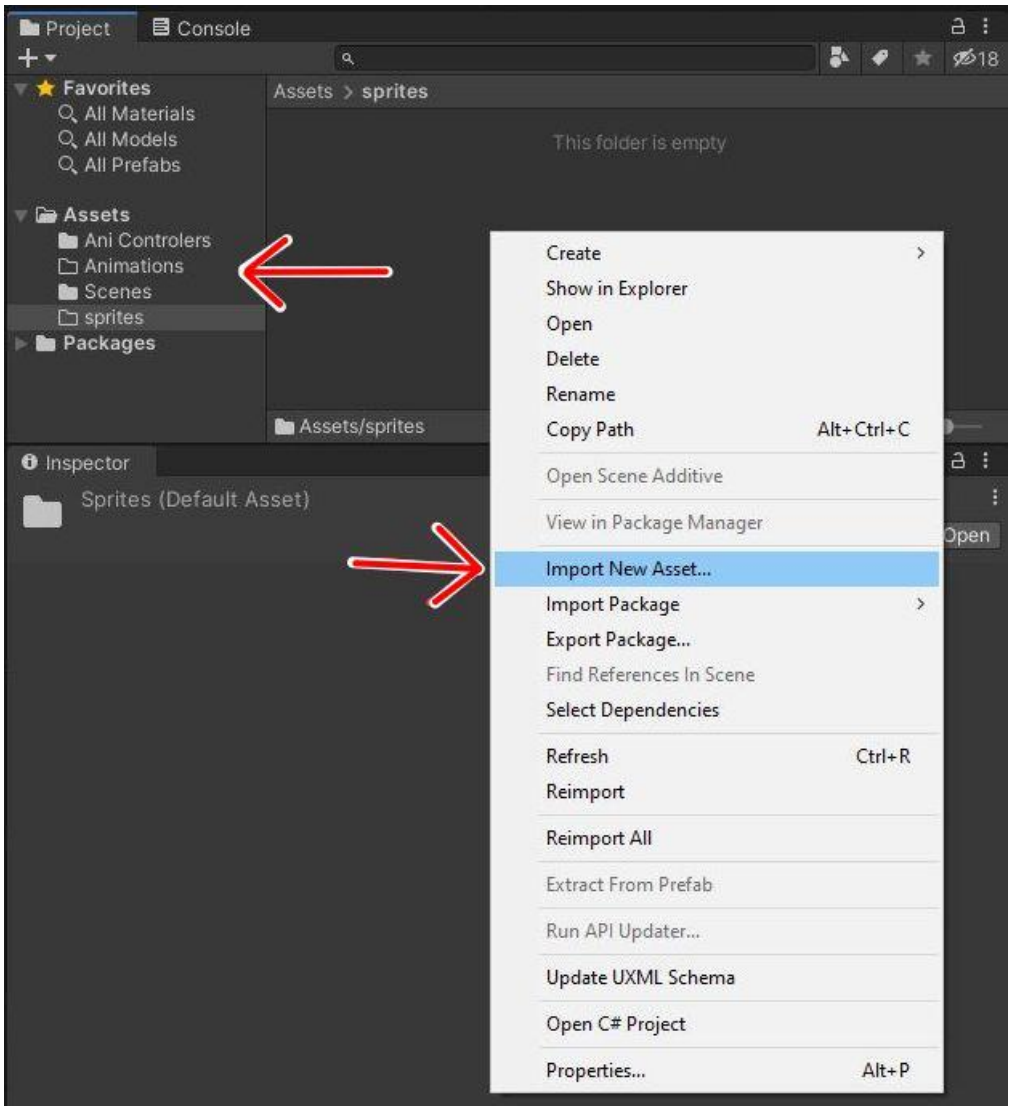
Unity

2) From the toolbar select **Window → Package Manager → 2D Animation → Install**

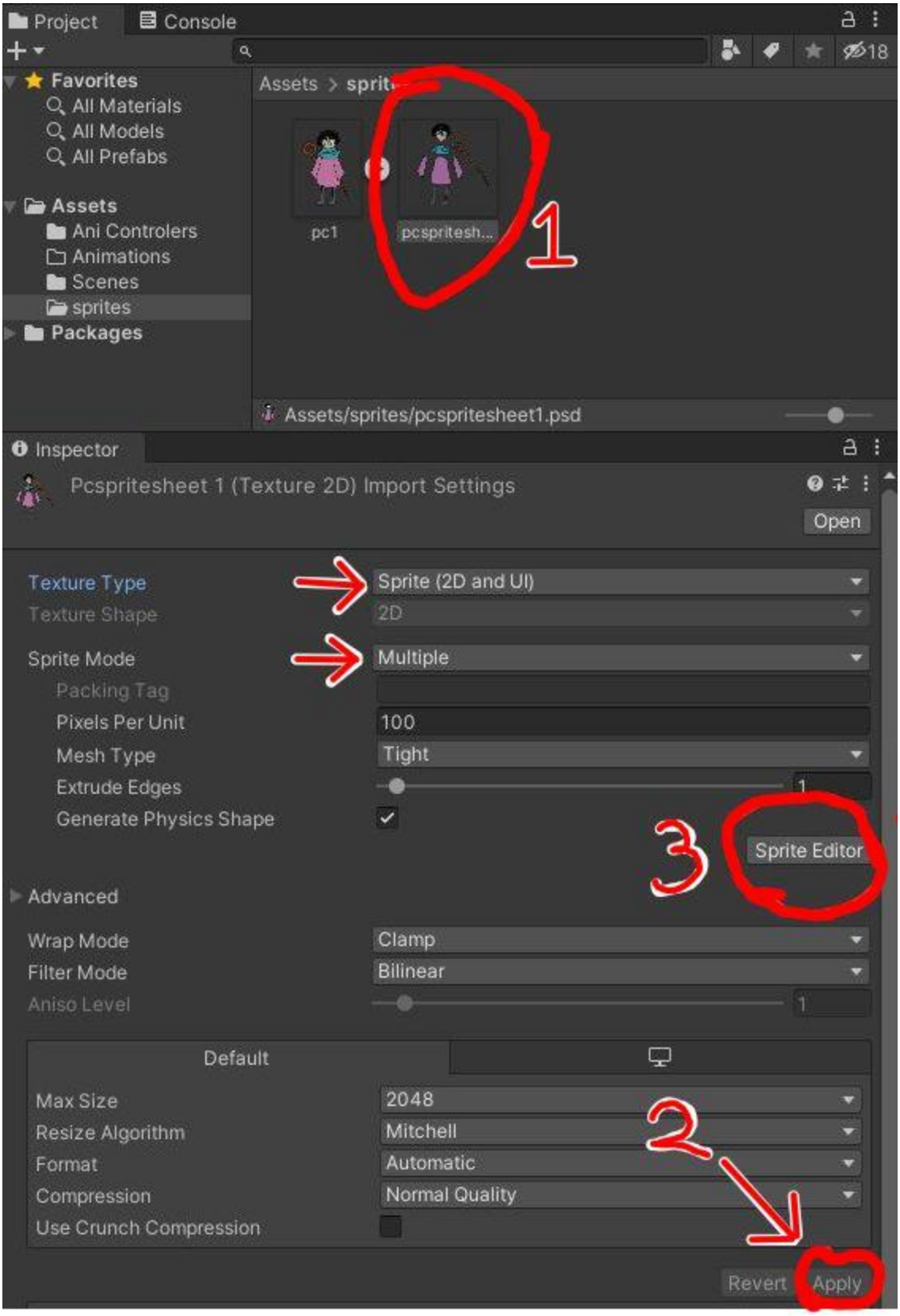


3) From the **Project** window select the **Assets** folder. Create 3 new folders named “sprites”, “animations”, and “animation controllers”. Import your 2 psd files into “sprites”.

You can do this by right clicking directly in the “sprites” folder and selecting **Import New Asset**.



4) From the **Project** window go to the “sprites” folder and select your sprite sheet. From the **Inspector** window make sure **Texture Type** is set to **Sprite (2D and UI)**, and **Sprite Mode** is set to **Multiple.** At the bottom of the **Inspector** window hit **apply** to save these changes. In the middle of the **Inspector** window hit the **Sprite Editor** button.


Project
Console
Favorites
All Materials
All Models
All Prefabs
Assets
Ani Controlers
Animations
Scenes
sprites
Packages
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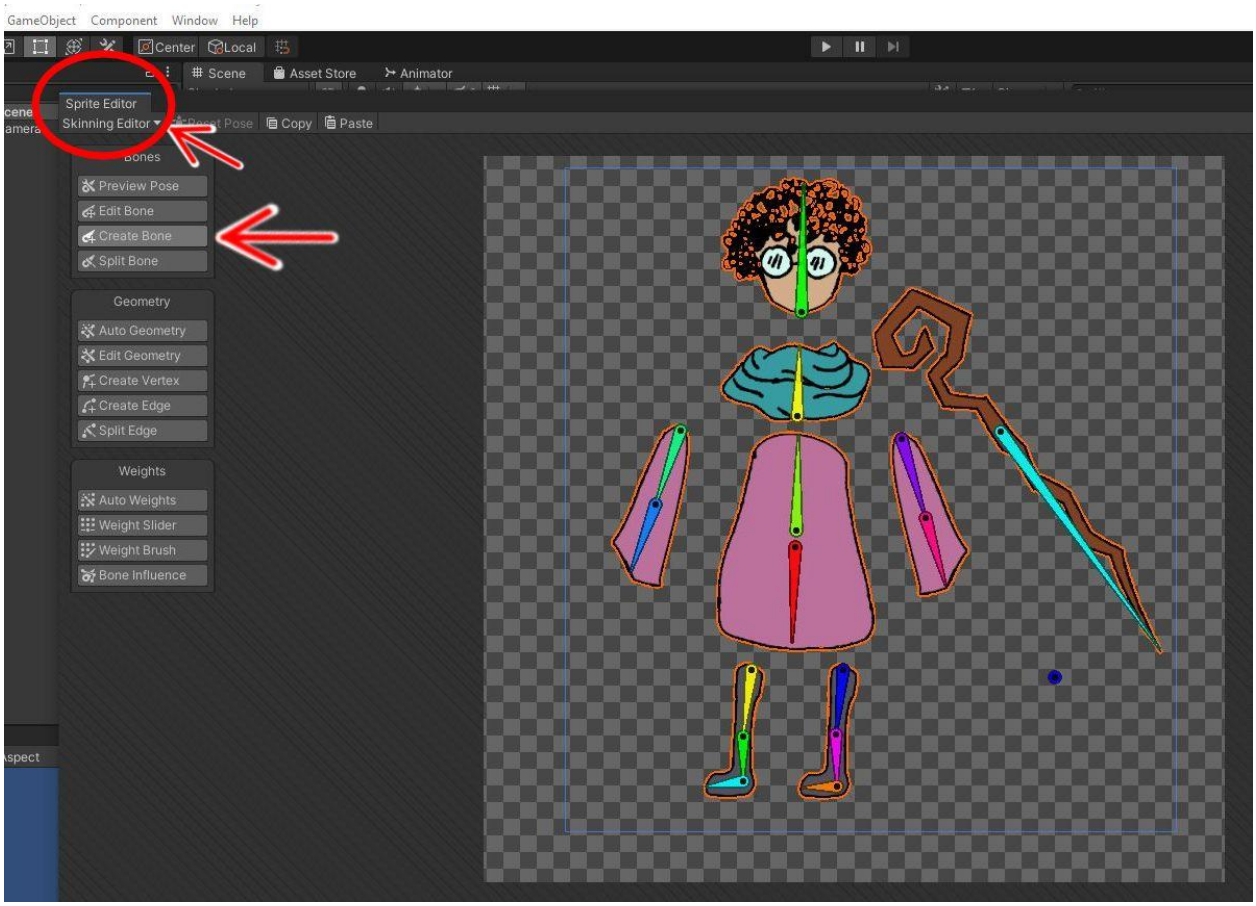
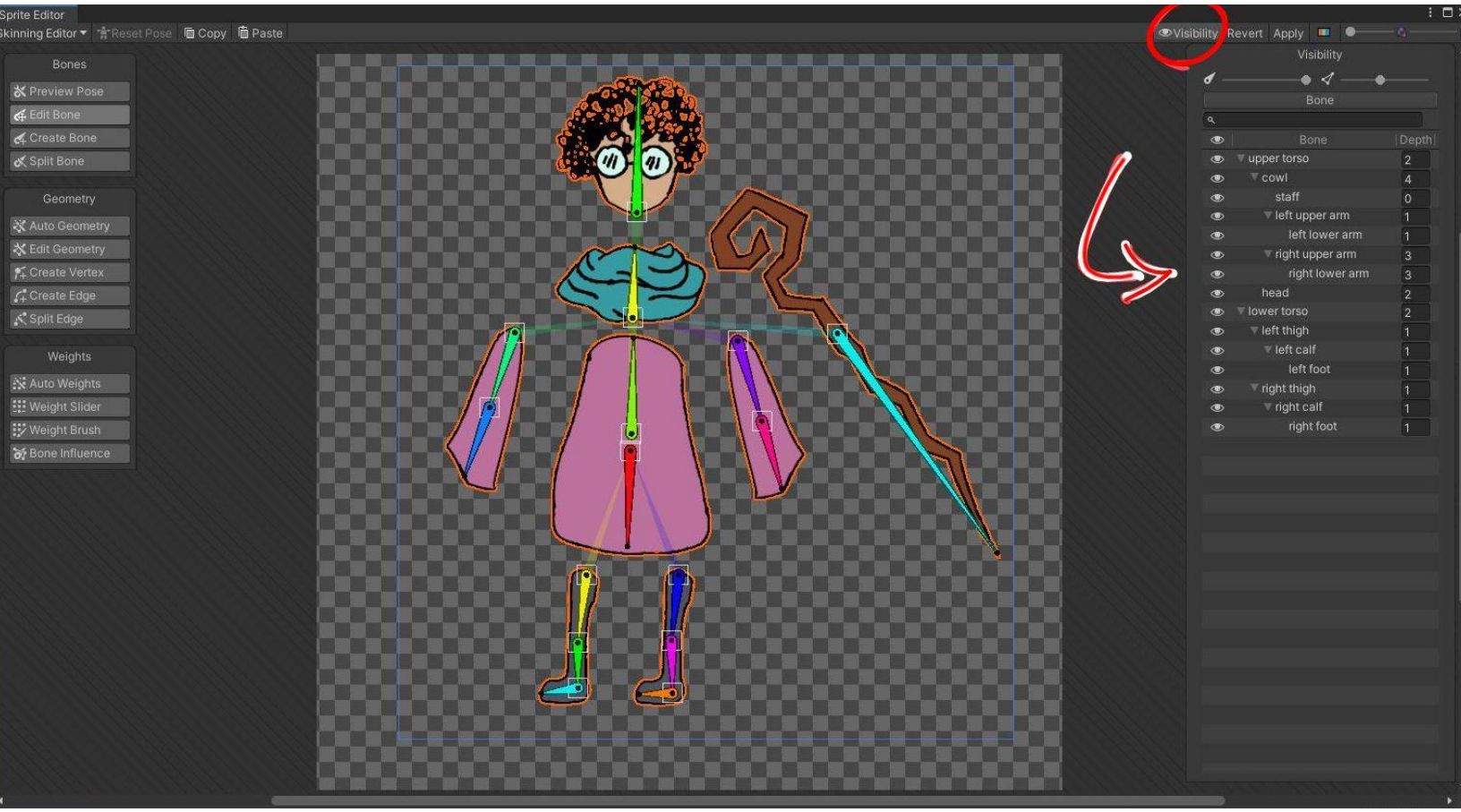
Assets/sprites/pcspritesheet1.psd
Inspector
Pcspritesheet 1 (Texture 2D) Import Settings
Open
Texture Type
Sprite (2D and UI)
Texture Shape
2D
Sprite Mode
Multiple
Packing Tag
Pixels Per Unit
100
Mesh Type
Tight
Extrude Edges
1
Generate Physics Shape
3
Sprite Editor
Advanced
Wrap Mode
Clamp
Filter Mode
Bilinear
Aniso Level
1
Default
Max Size
2048
Resize Algorithm
Mitchell
Format
Automatic
Compression
Normal Quality
Use Crunch Compression
2
Revert
Apply

5) From the **Sprite Editor** window use the mouse to create a blue box encompassing everything on the sprite sheet. Anytime you want to save, click **apply** in the upper right corner of the **Sprite Editor** Window.

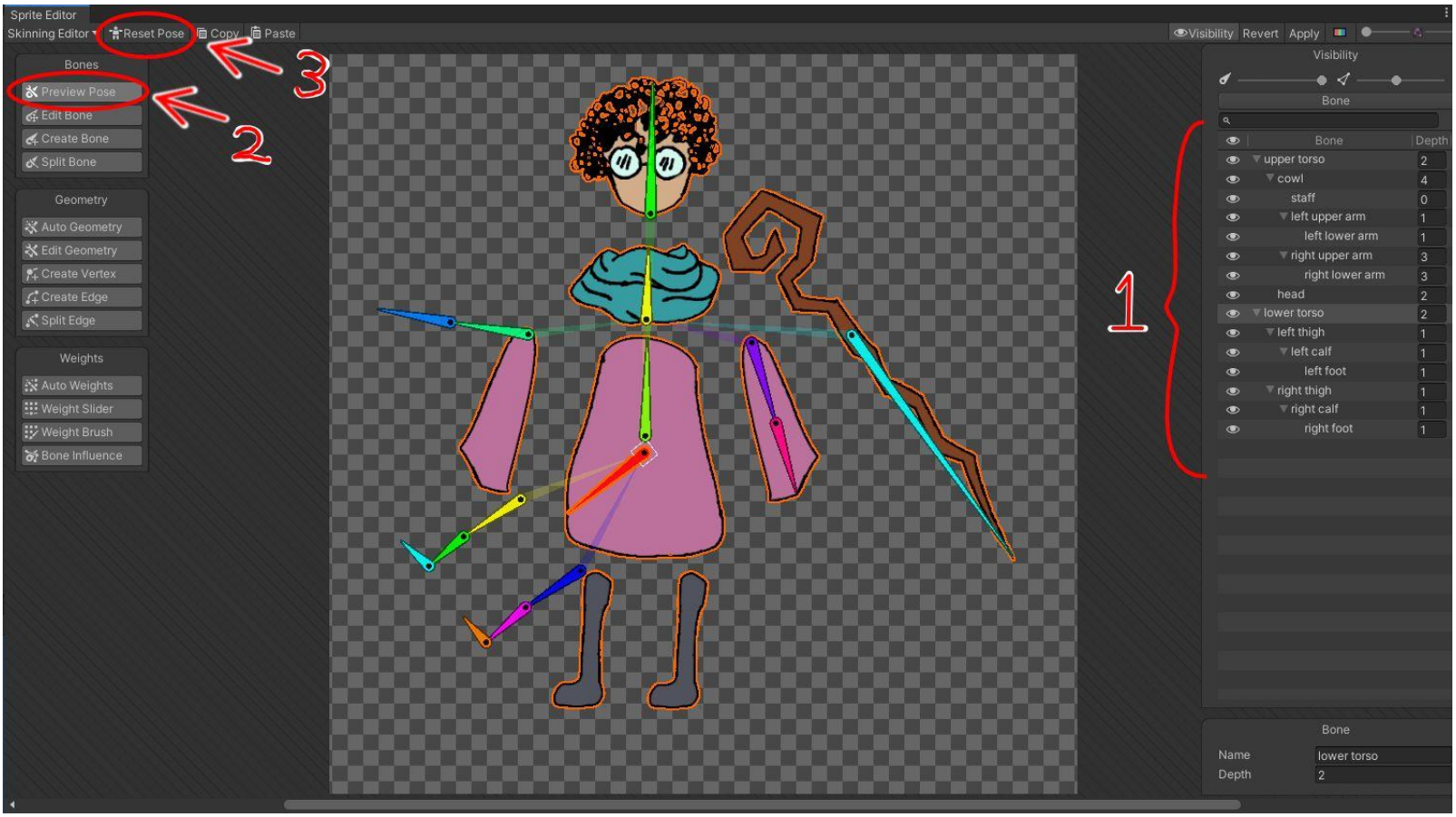
6) In the upper left corner of the **Sprite Editor** window switch to the **Skinning Editor.** Select **Create Bone,** then double click anywhere on the sprite sheet to activate. Create new bones at joints. When you want to move to a different sprite piece, right click to break the bone chain. In this example the torso has 2 bones so the upper and lower body can move independently of each other. The staff bone starts in the middle of the staff so that the pivot point (black dot on thick end of bone) will be where the staff attaches to the back.



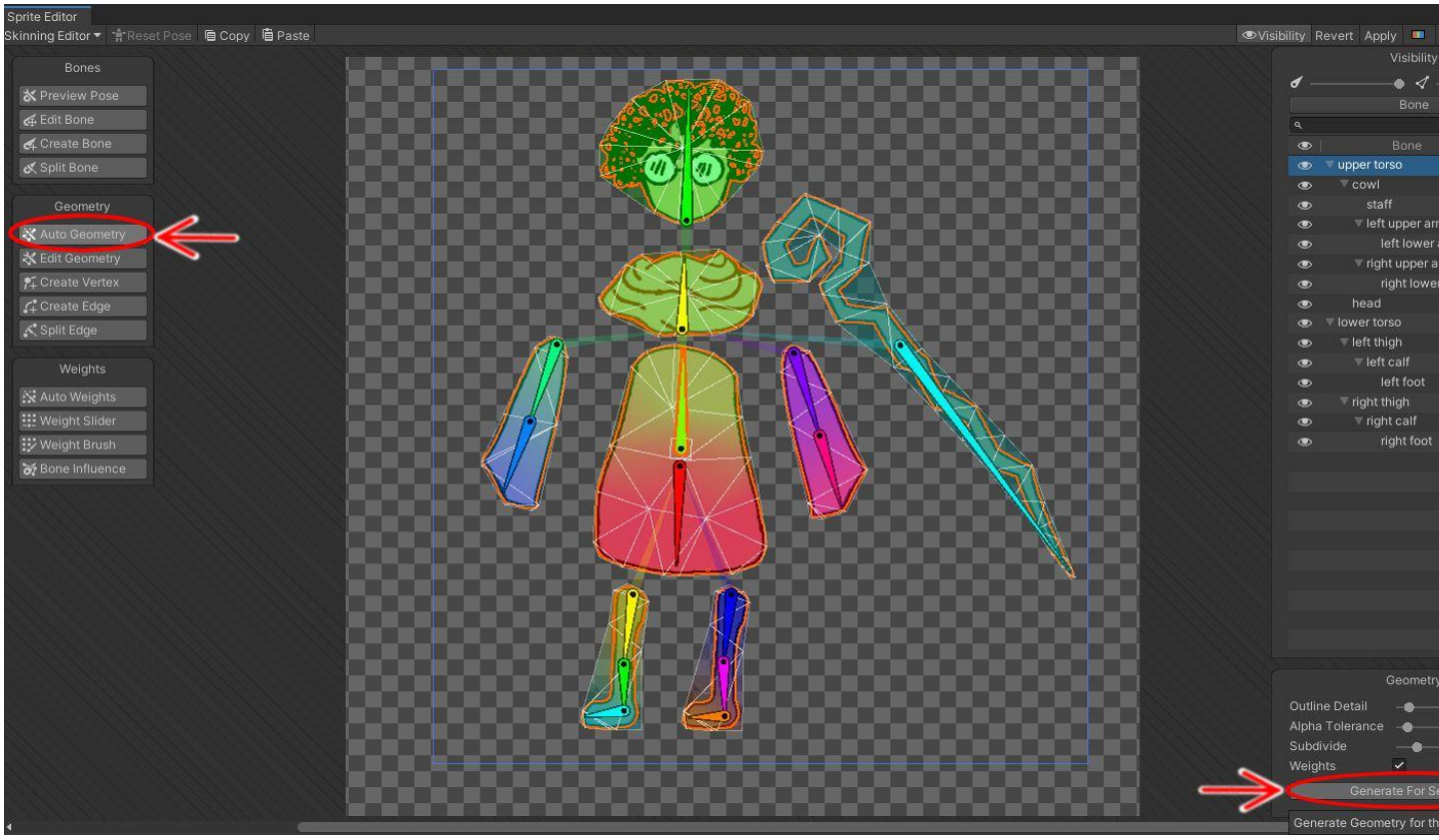
7) Using the **Visibility** tool, label all the bones. Set all the depth values to determine what pieces should be on top. In this example the staff bone is set to 0 because it goes behind every other layer, and the cowl bone is set to 4 because it goes on top of every other layer. The torso bones are set to 2 so the left arm bones (set to 1) will be behind the torso, and the right arm bones (set to 3) will be on top of the torso.



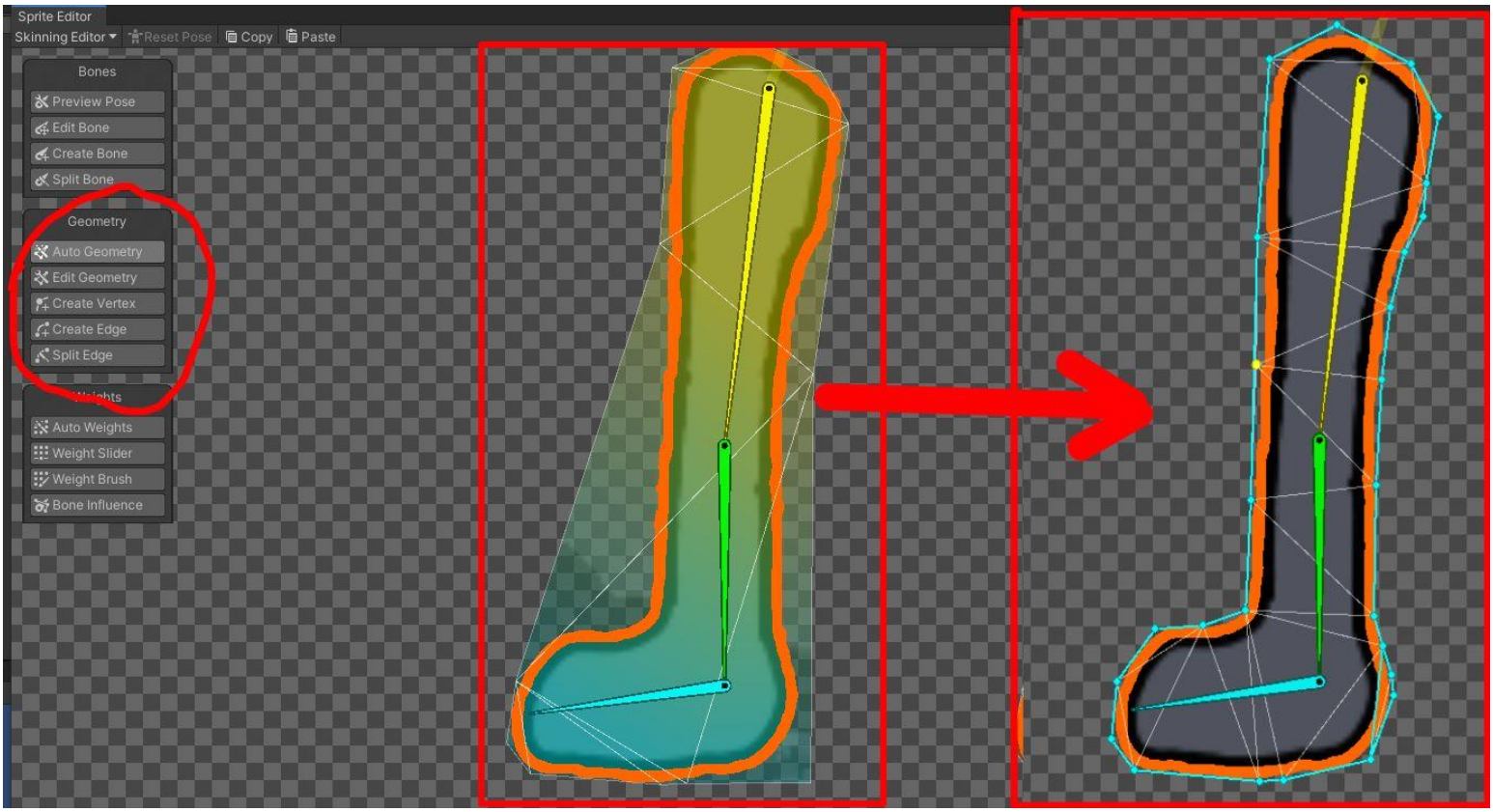
8) Parent bones appropriately. In this example the upper and lower torso bones are the most parental of parents. Thigh bones are children of the lower torso so they will move with the lower torso, calf bones are children of thigh bones so they will move when the thigh bones are moved etc. In the upper left corner click **Preview Pose** to move the bones and make sure they are parented correctly. The sprite will not move with the bones. Click **Reset Pose** when done.



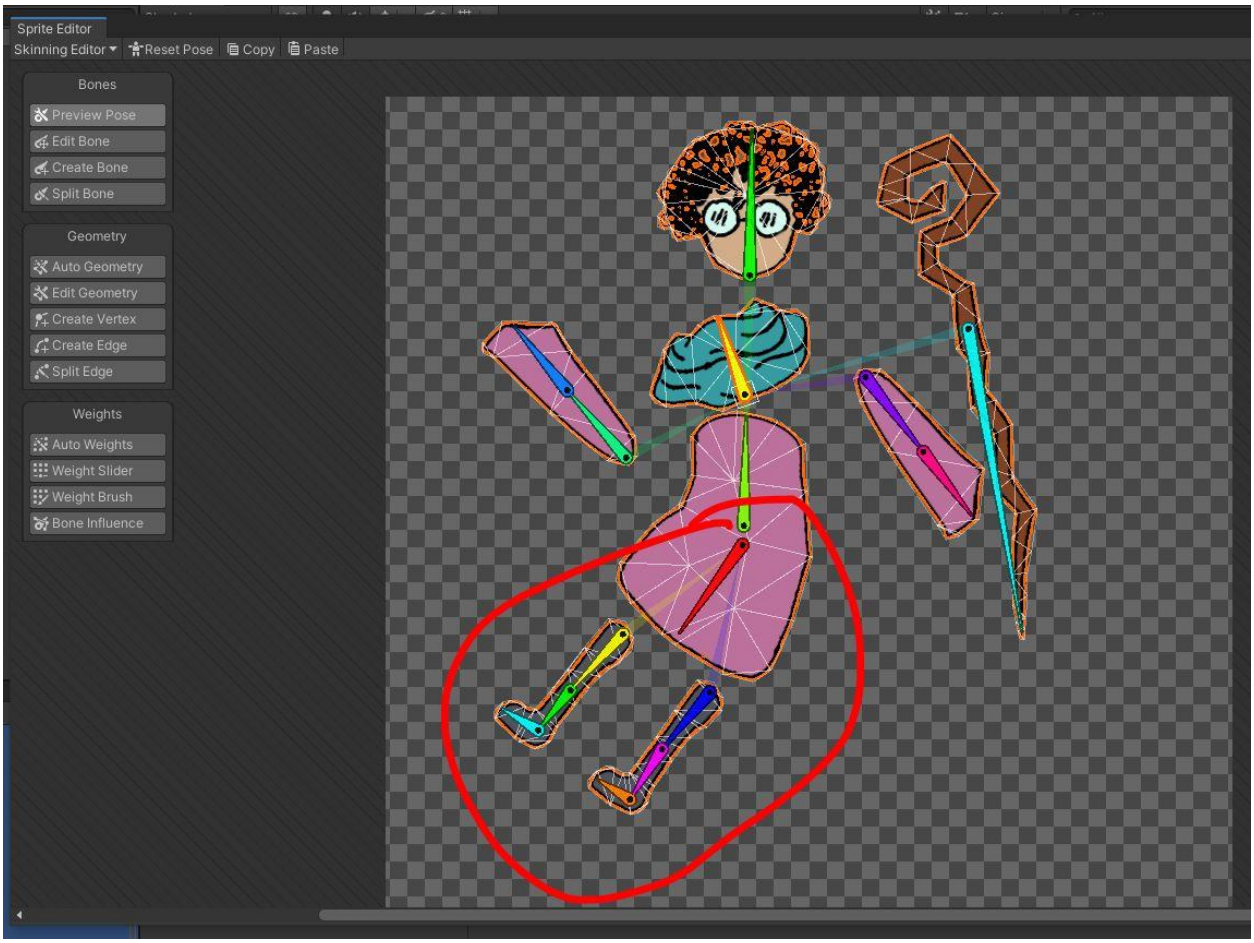
9) Click **Auto Geometry** and **Generate For Selected**. All the pieces will now be coloured.



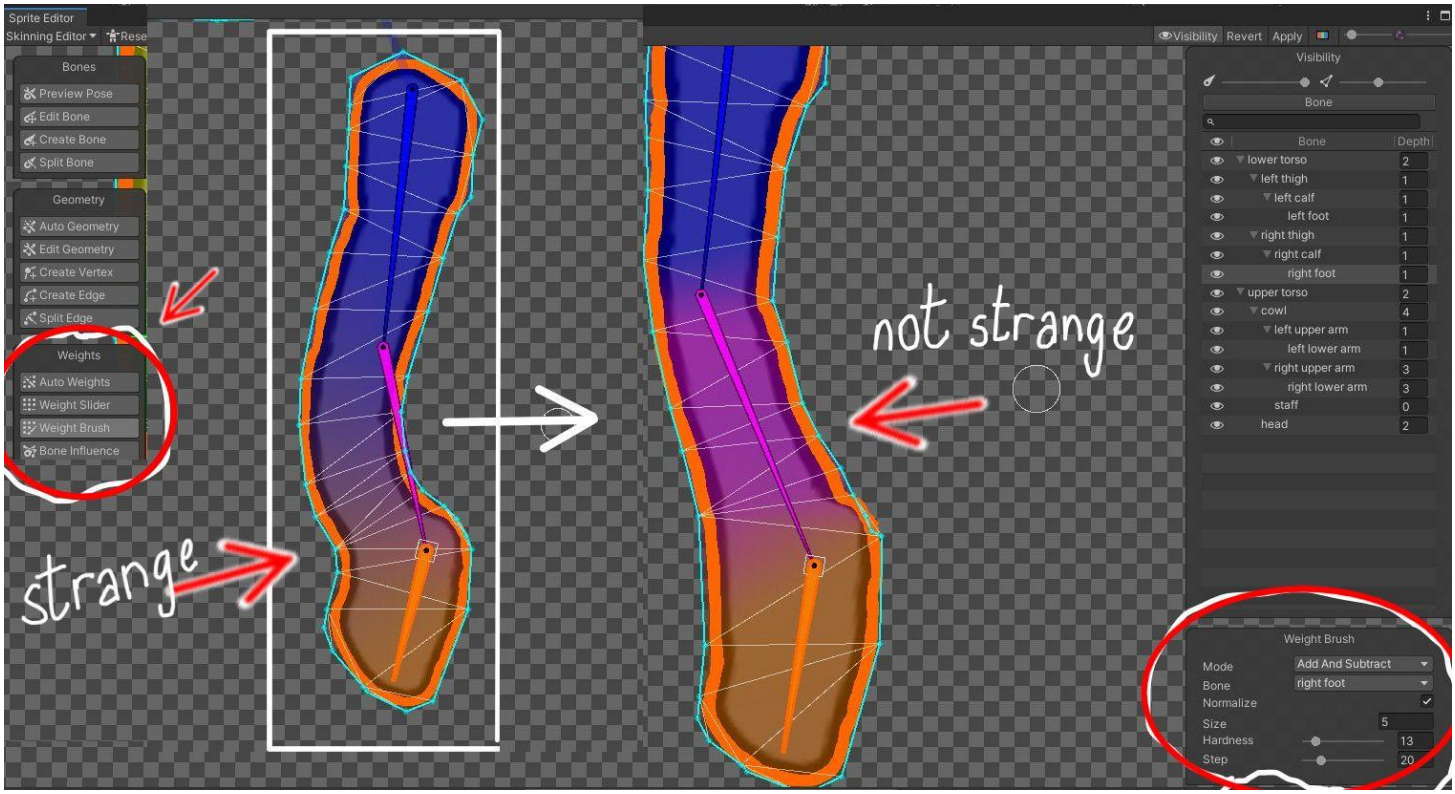
Adjust outlines as needed using geometry tools.



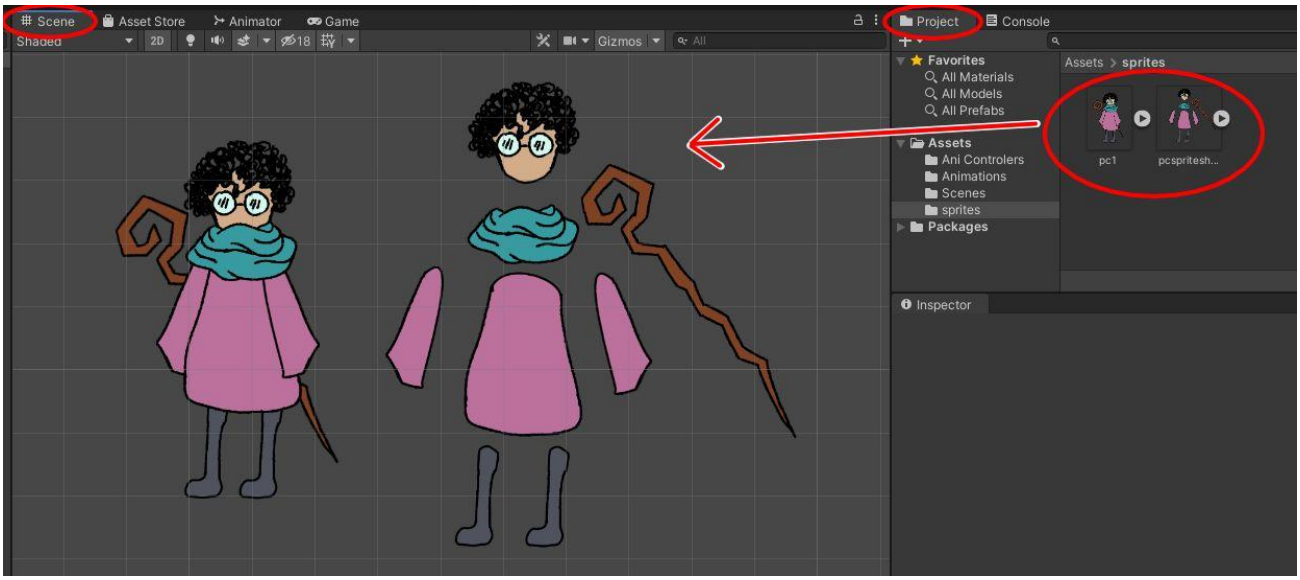
Use **Preview Pose** to move bones, the sprite will now move with the bones. **Reset Pose** when done.



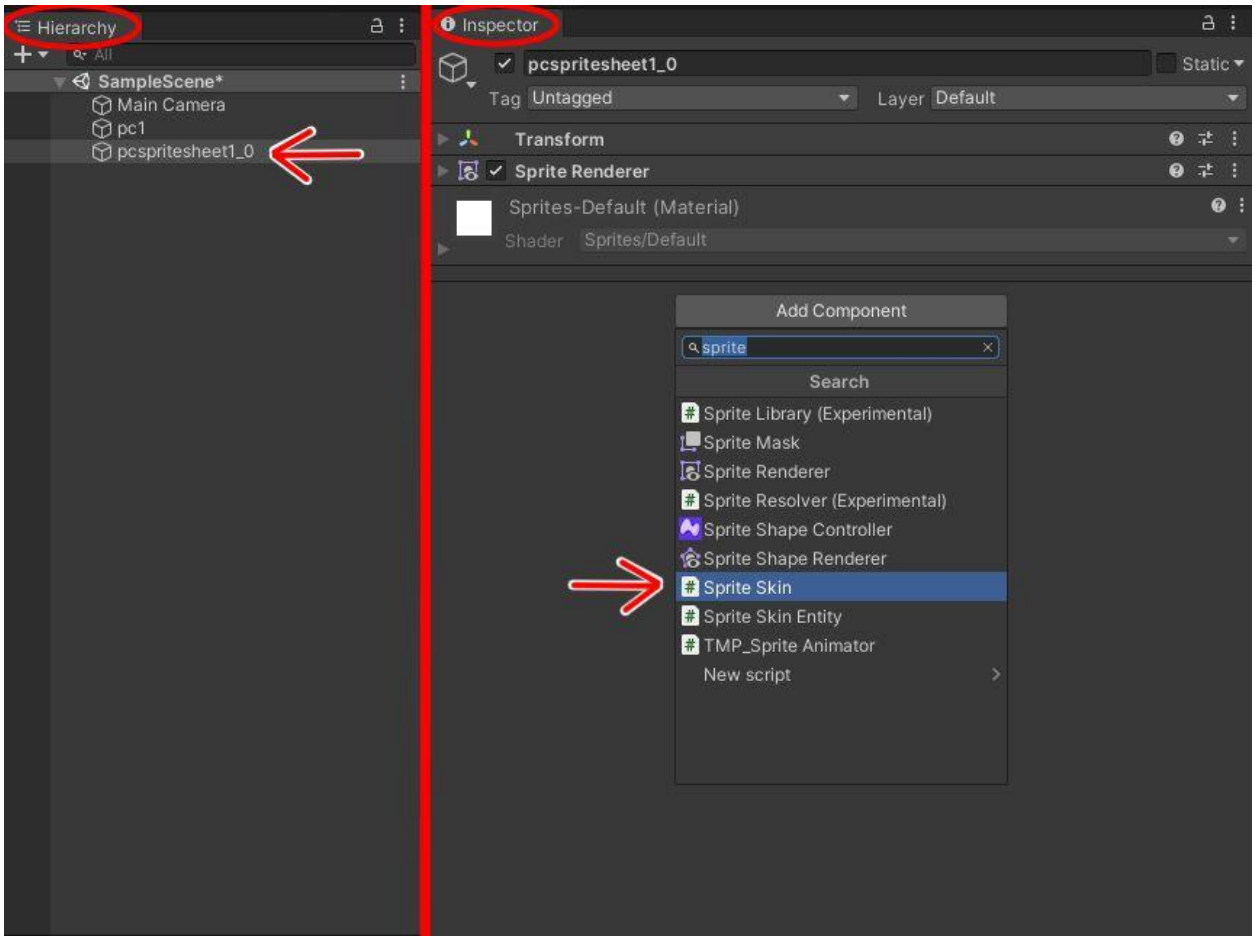
10) On pieces that have more than 1 bone (in this case the arms, legs, and torso), use the **Weights** tool and **Preview Pose** to make sure the pieces don't look strange when the joints are bent. You may have to add more vertices to the geometry of the sprite. When done close the **Sprite Editor** window.



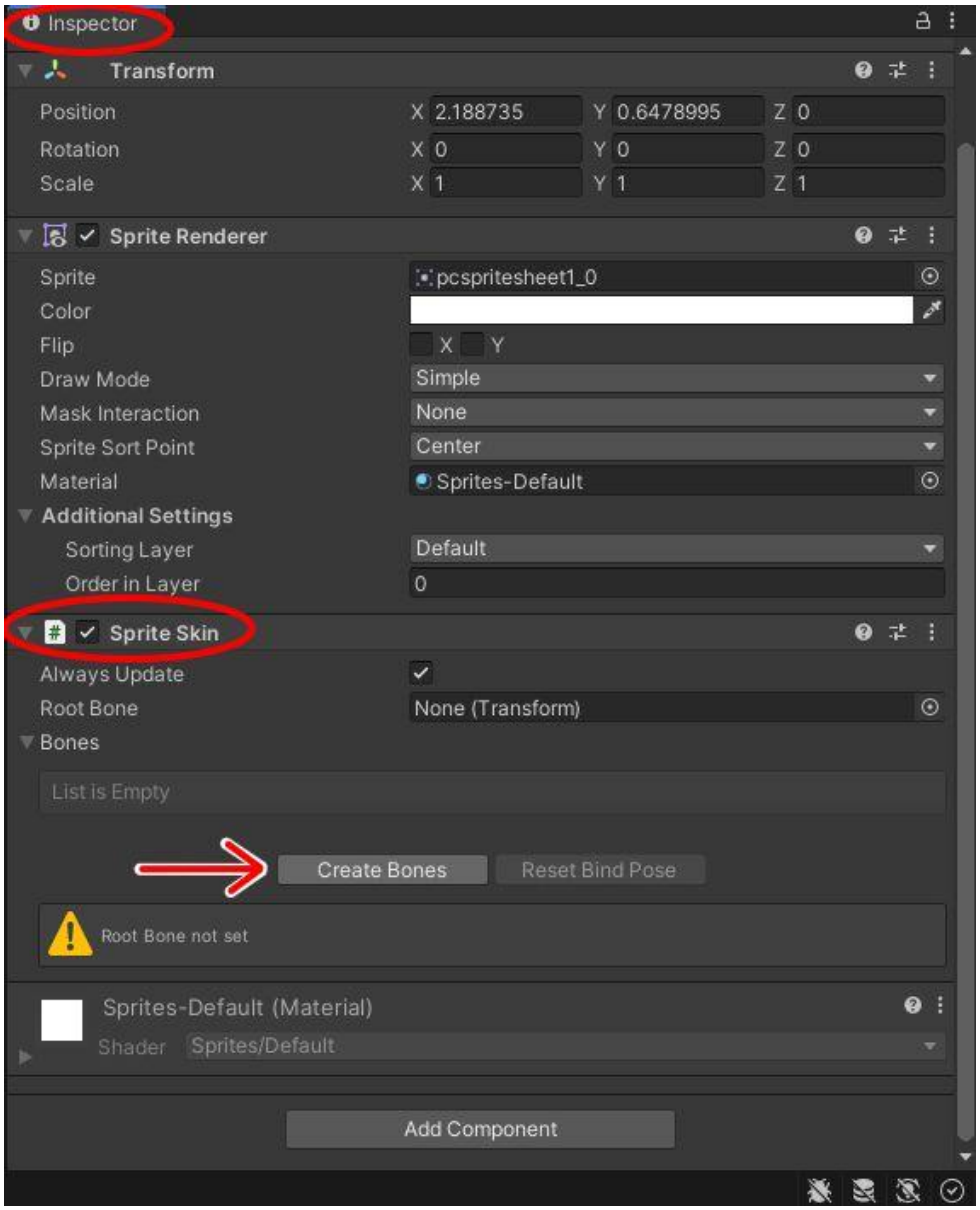
11) From the **Project** window drag your sprite sheet and assembled sprite into the **Scene** window.



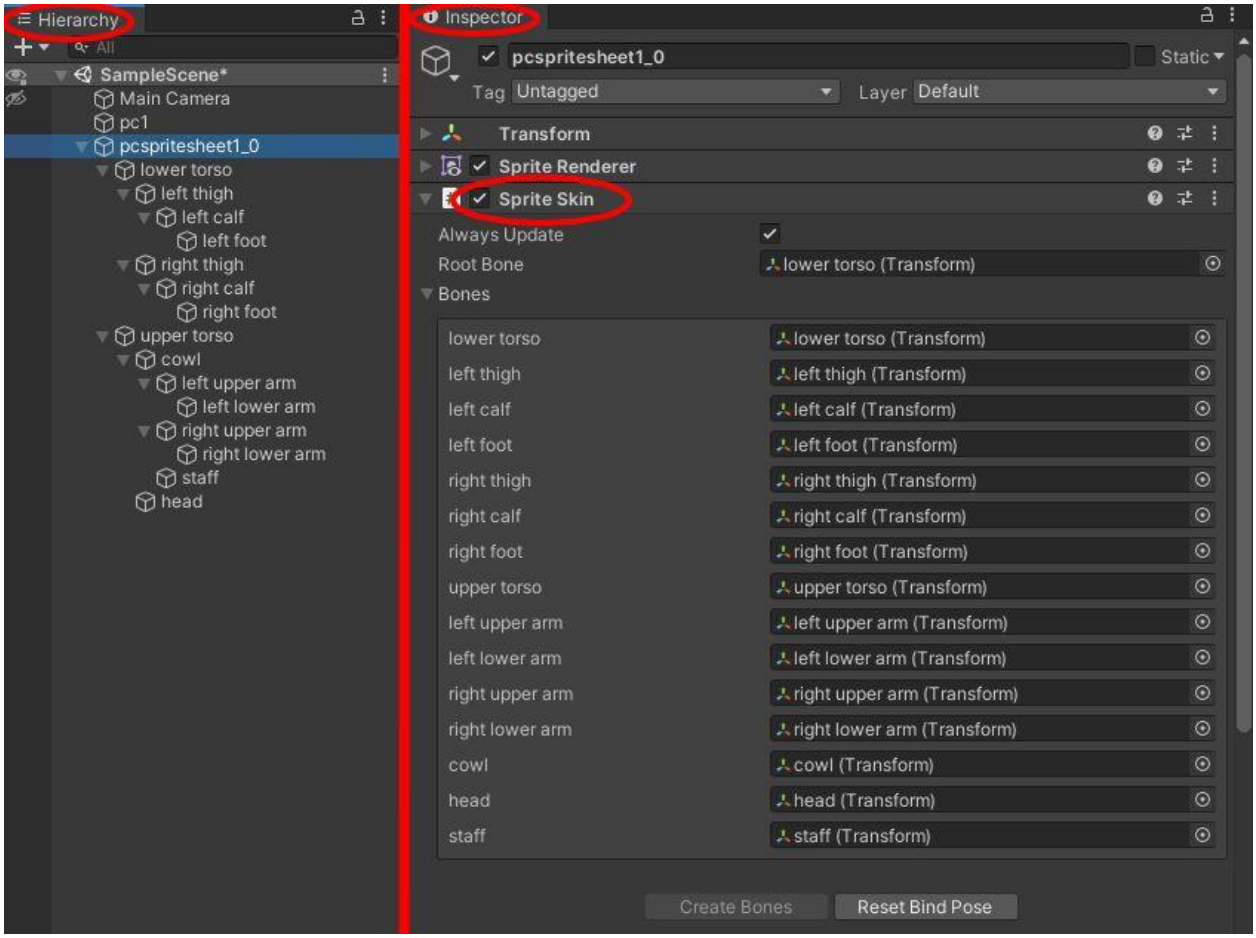
From the **Hierarchy** window select your sprite sheet, and then from the **Inspector** window click **Add Component**. Search for “sprite” and select **sprite skin**.



12) From the **Sprite Skin** component hit the **Create Bones** button.

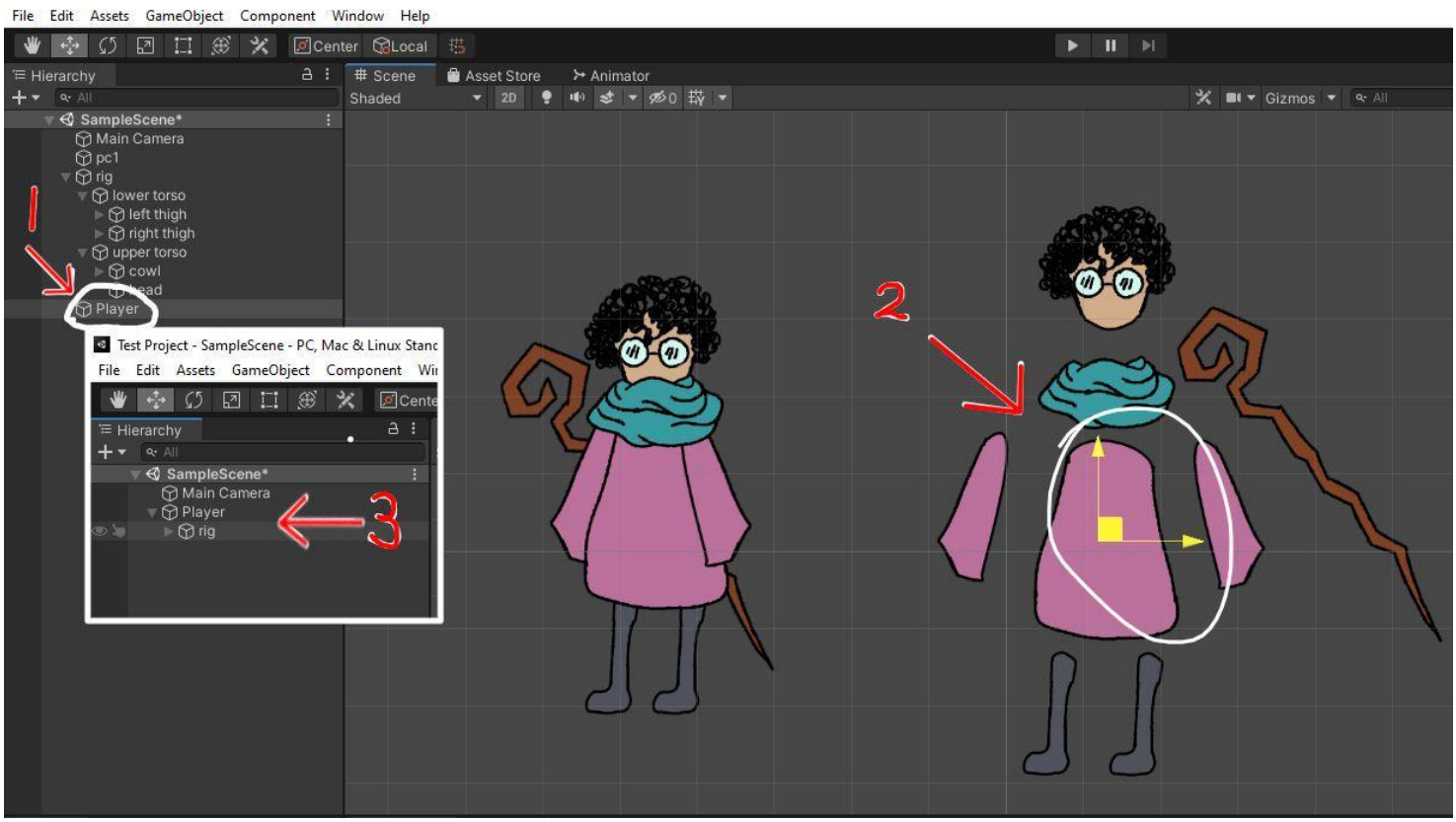


All your bones should now be showing in the **Sprite Skin** component AND in the **Hierarchy** window under your sprite sheet game object.

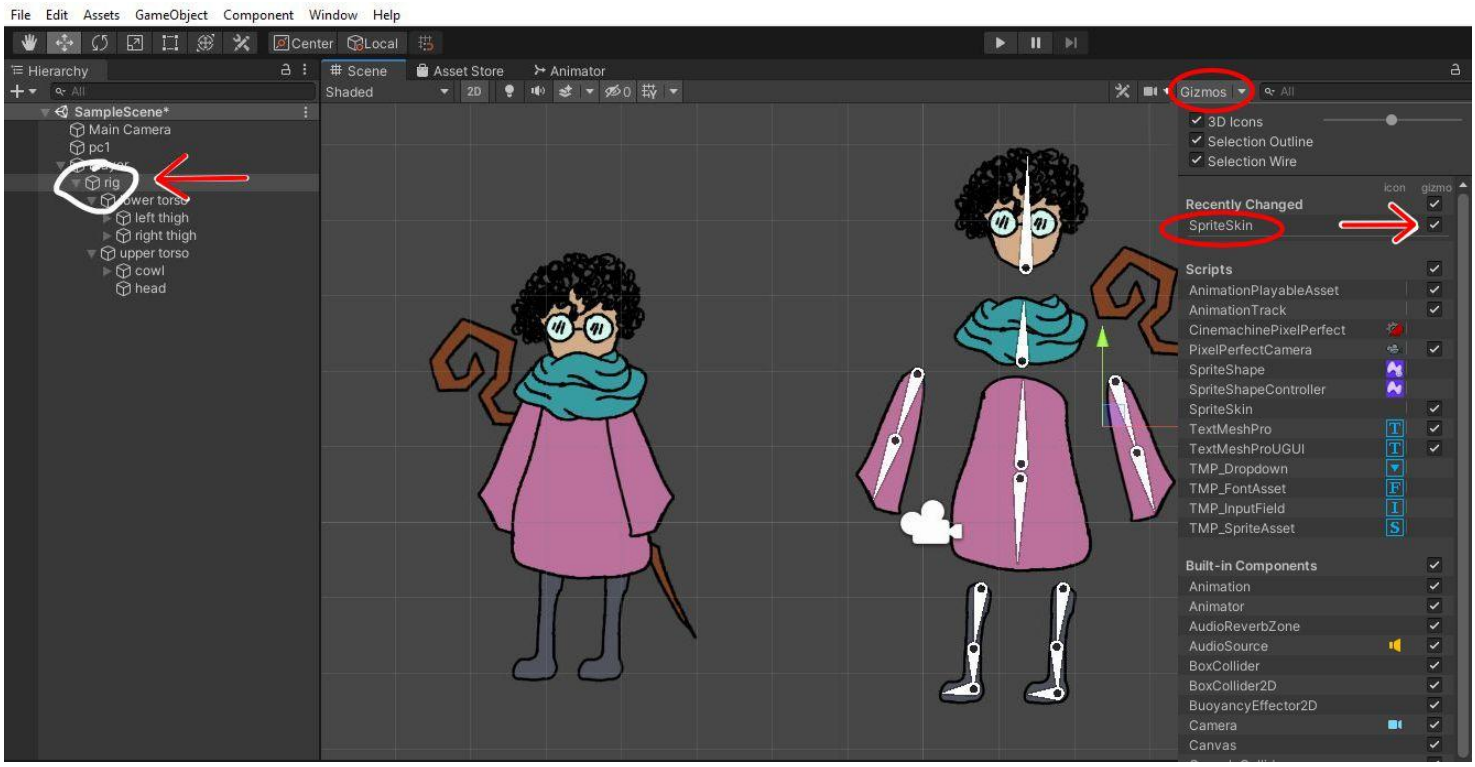


13) In the **Hierarchy** window right click and select **Create Empty** to make a new game object**,** rename it “player”. Rename the sprite sheet game object to “rig”.

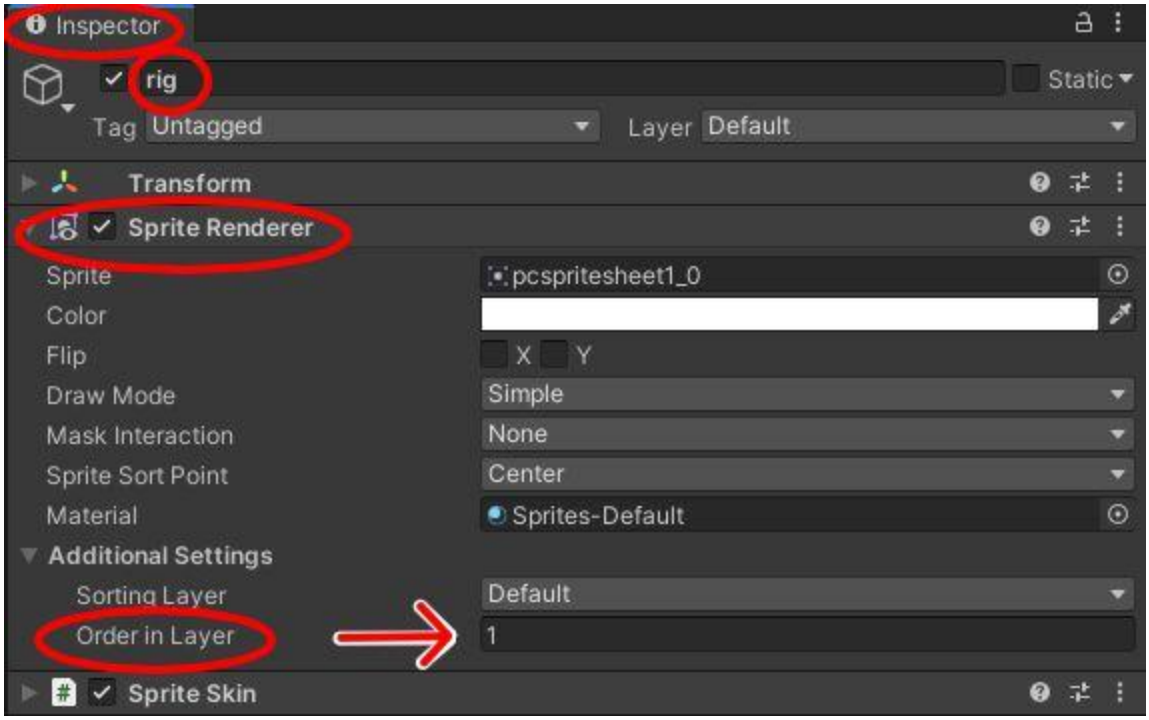
Select the **player** game object and move the transform object to the center of the sprite sheet torso. Move **rig** to be a child of **player**.



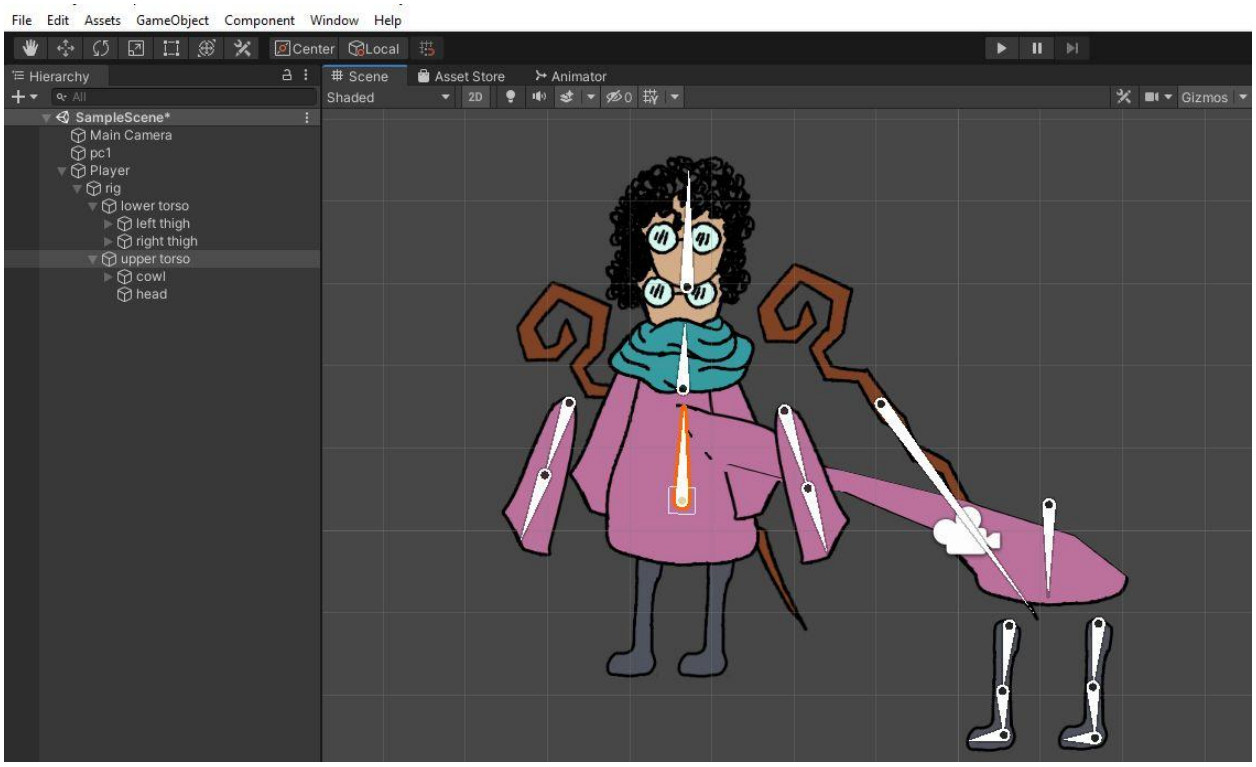
From the **Hierarchy** window select **rig** and the bones should be visible in the **Scene** window. If not, go to **Gizmos** and make sure the box is checked for **SpriteSkin**. You may also need to toggle on **Gizmos.**



14) In the **Inspector** window under the **Sprite Renderer** component set **Order in Layer** to 1. This is so that the **rig** game object will layer on top of the **pc1** game object which should have it's **Order in Layer** auto set to 0.

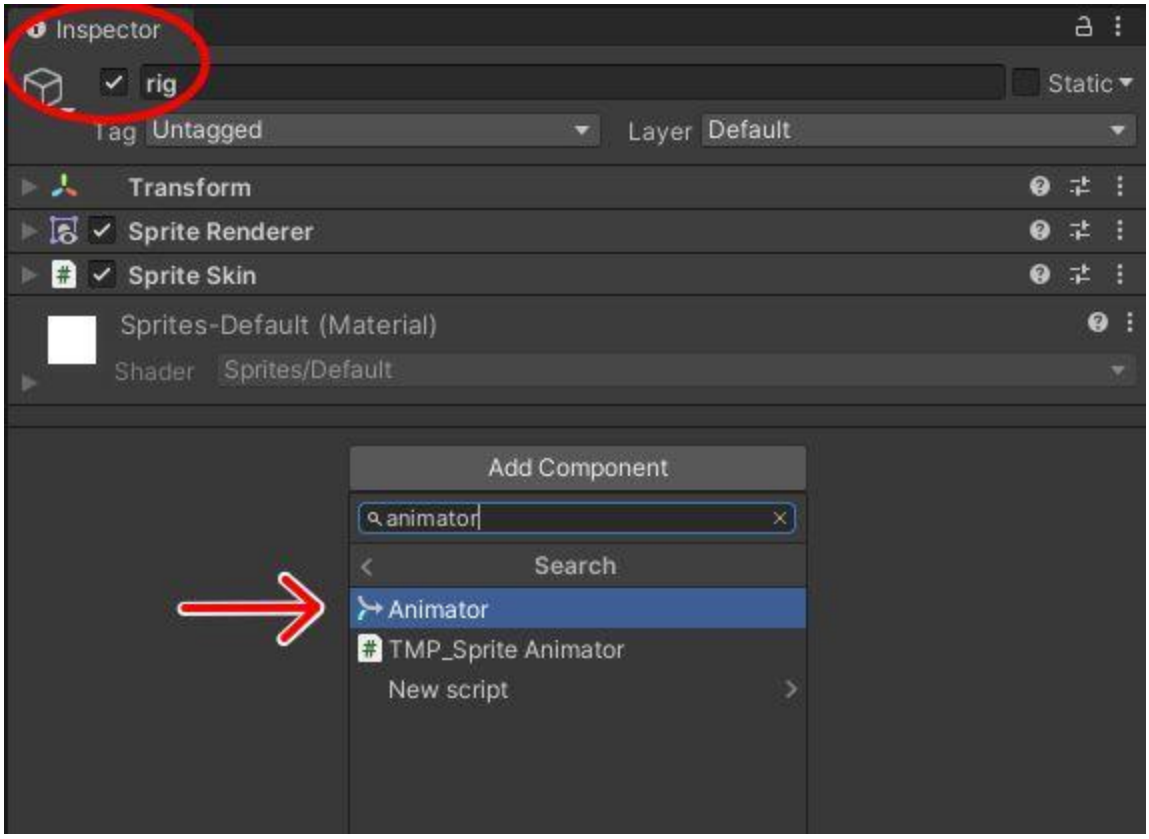


Using **pc1** as a template, click and drag the bone pivot points (black dot on thicker end of bone) on top of your assembled asset. Start with the top most parent bones and work your way down their children. If you move children first they will move out of position when their parent bone is moved. After dragging all pieces into place you can delete your pc1 game object from the hierarchy window.

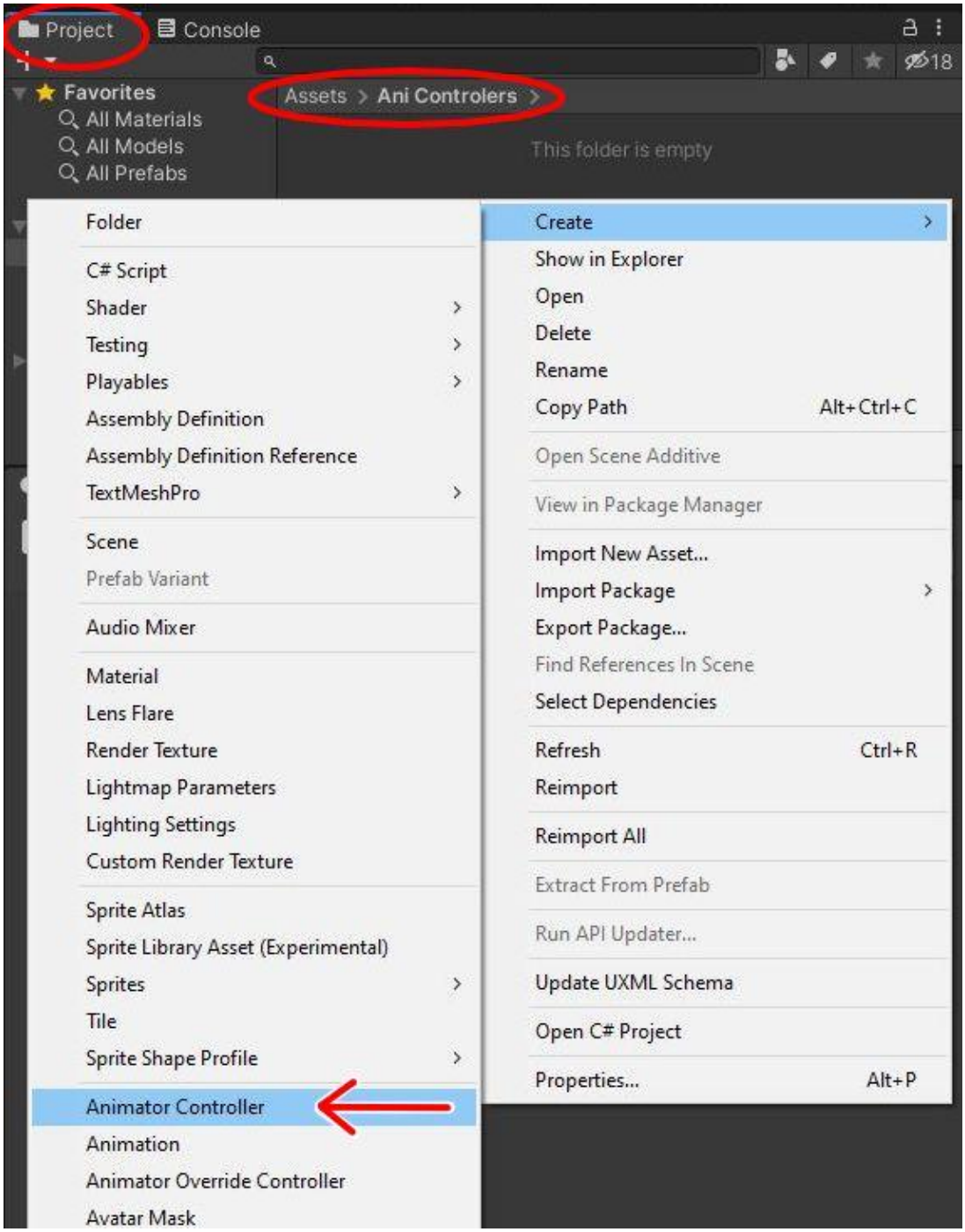


Your asset is now ready to animate!

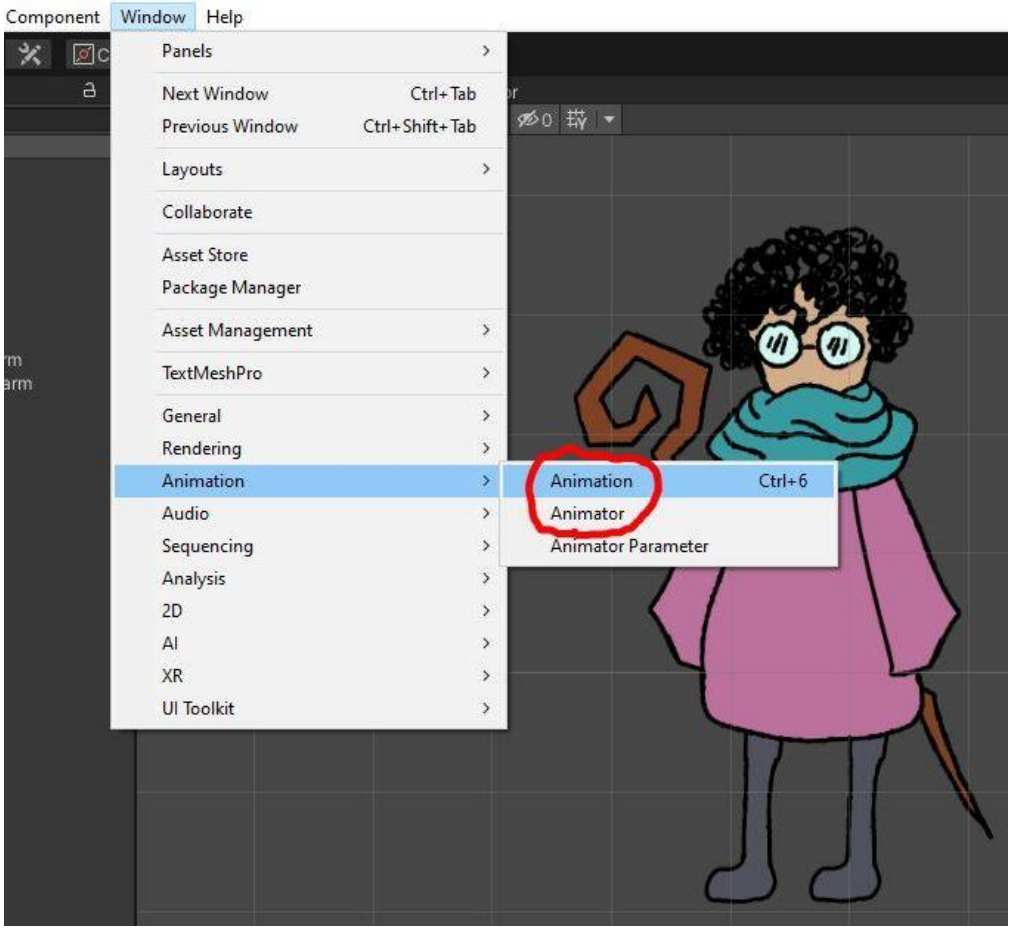
14) From the **Hierarchy** window select rig. From the **Inspector** window hit the **Add Component** button and search for **Animator.**



15) From the **Project** window in the “animation controllers” folder, right click to add an animation controller and name it appropriately, in this example it’s “player controller”.



16) Open both the **Animation** and the **Animator** windows by going to the toolbar and selecting **Window → Animation → Animation/Animator.**


Component
Window
Help
Panels
Next Window Ctrl+Tab
Previous Window Ctrl+Shift+Tab
Layouts
Collaborate
Asset Store
Package Manager
Asset Management
TextMeshPro
General
Rendering
Animation
Audio
Sequencing
Analysis
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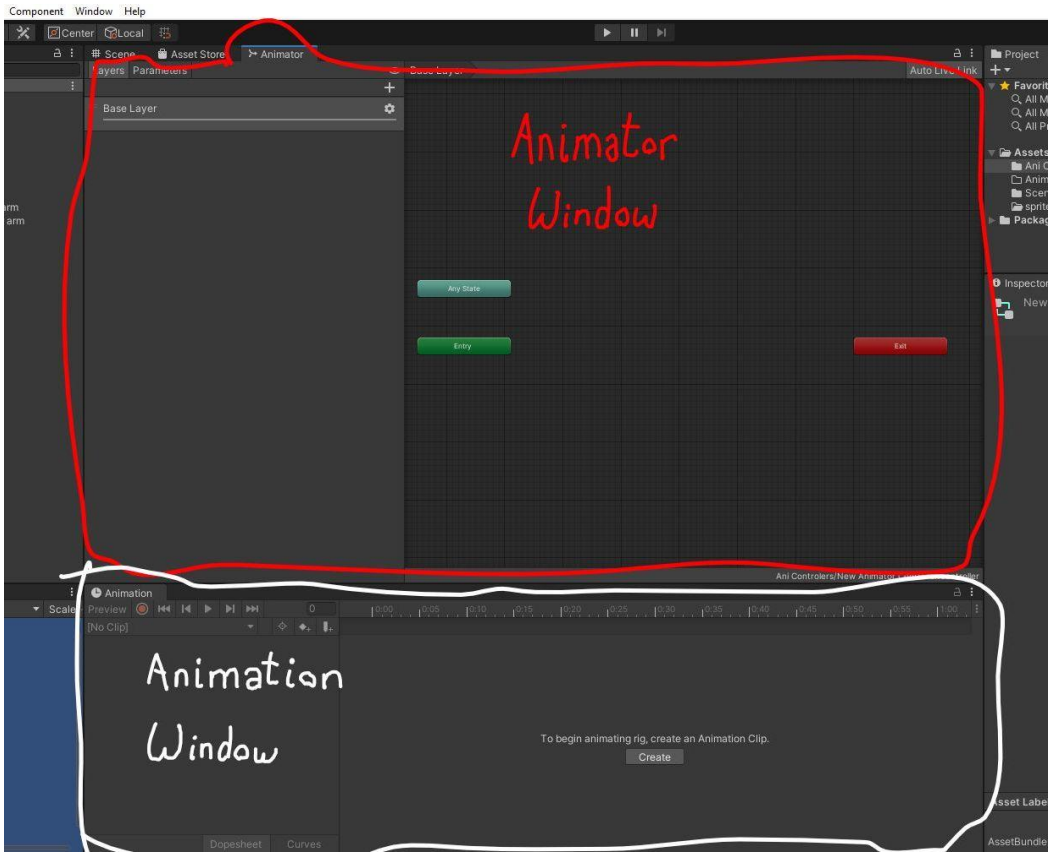
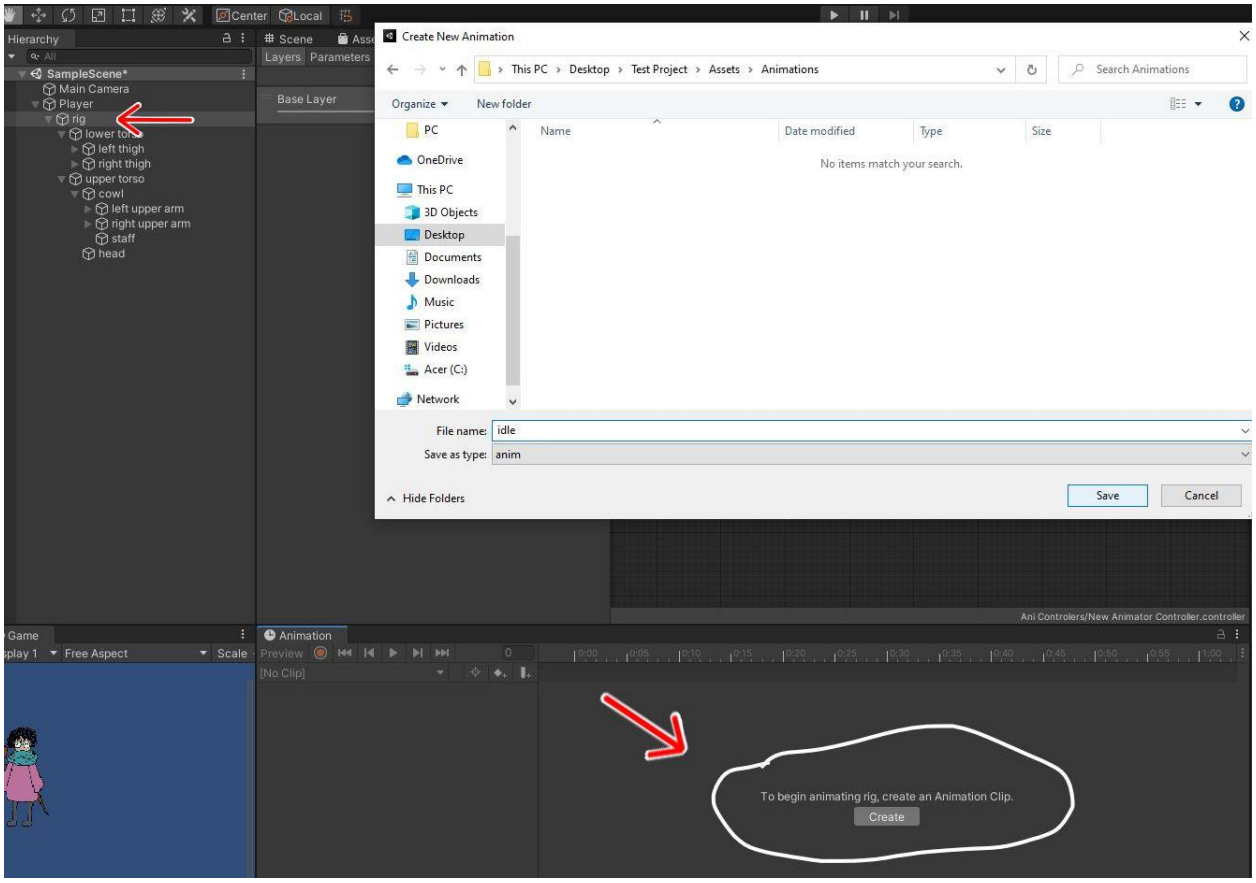
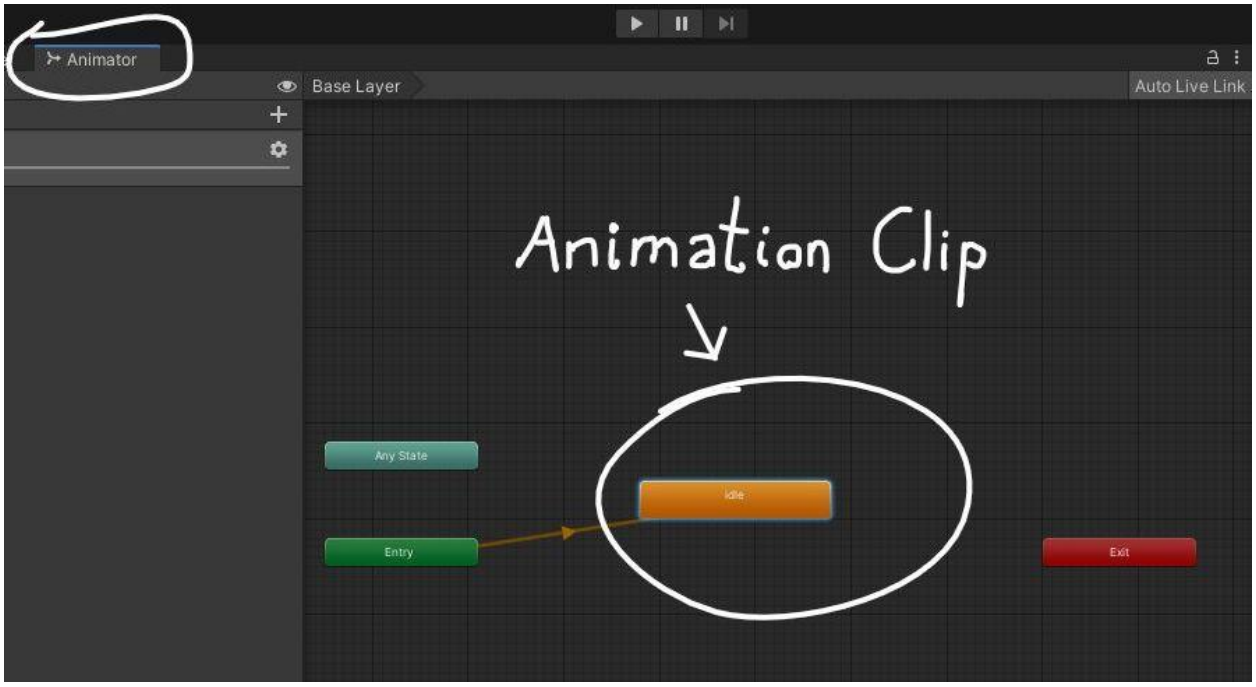
UI Toolkit
Animation Ctrl+6
Animator
Animator Parameter



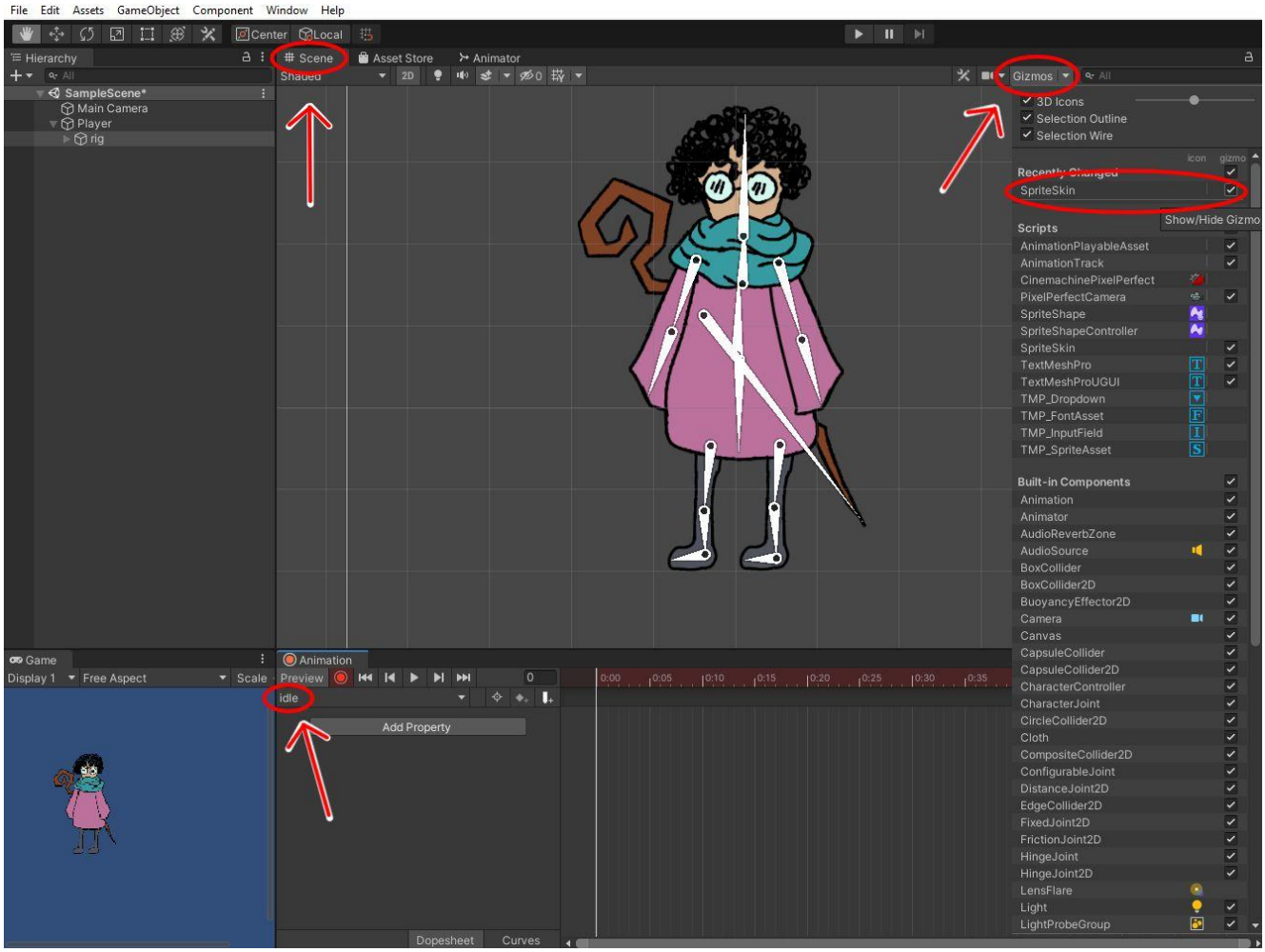
17) From the **Animation** window click the **Create** button to create an animation clip. Navigate to the “animations” folder and name your clip appropriately, in this example it’s “idle”.



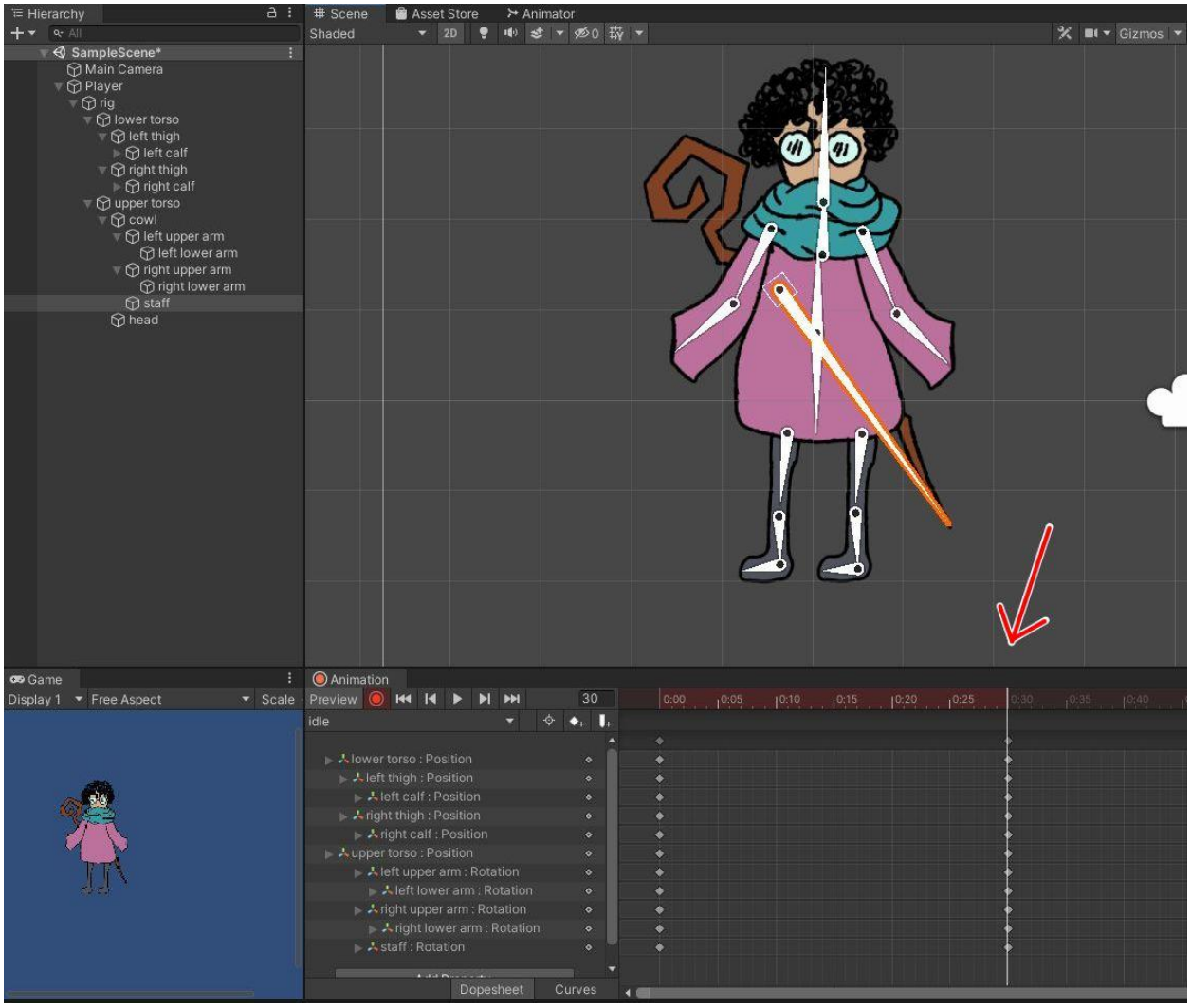
18) You should see the animation clip as a coloured box in the **Animator** window, if not then click anywhere in the window and it should reveal itself.



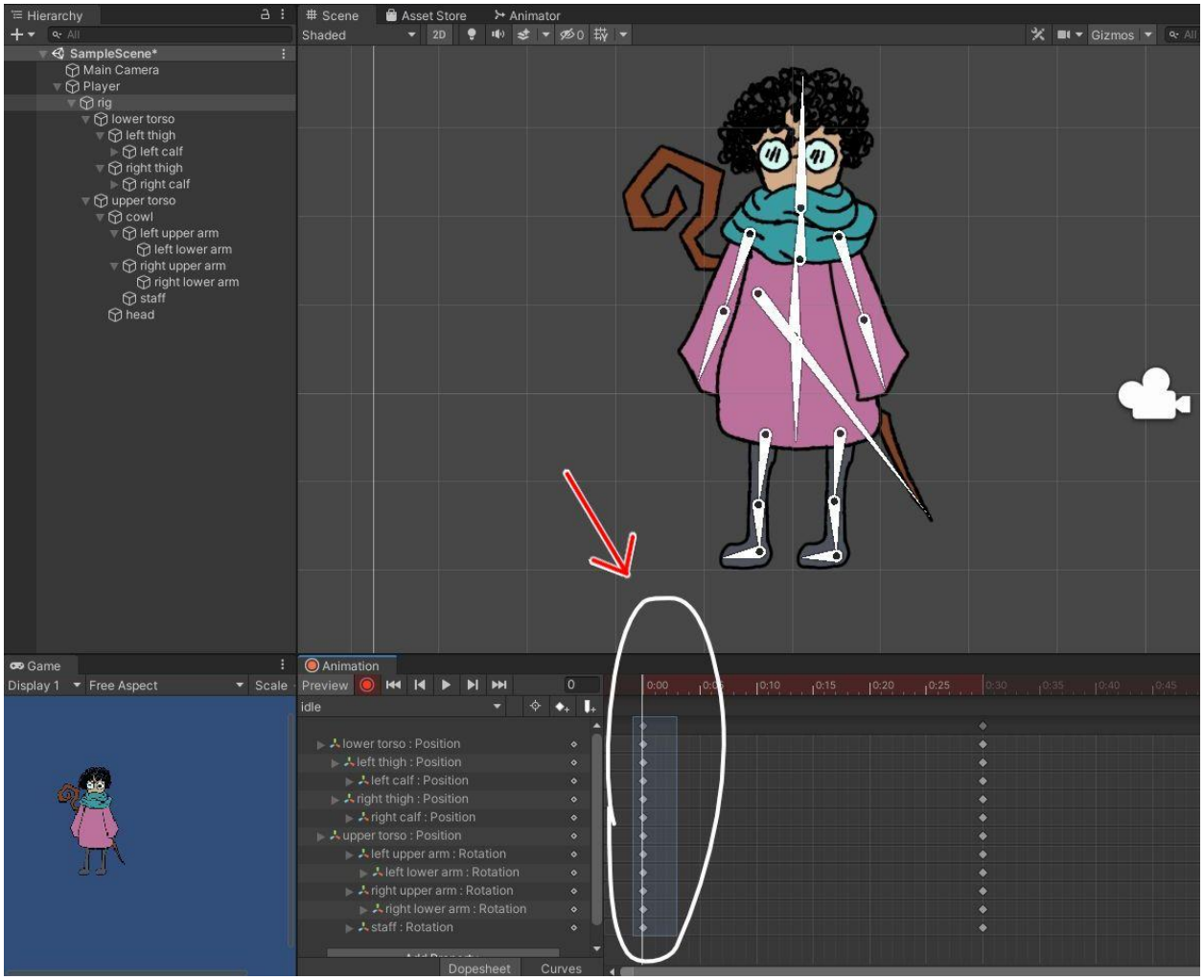
19) Open the **Scene** window. From the **Animation** window make sure your animation clip is selected, in this example it's "idle". If the bones of the asset are not showing, toggle **Gizmos** on.



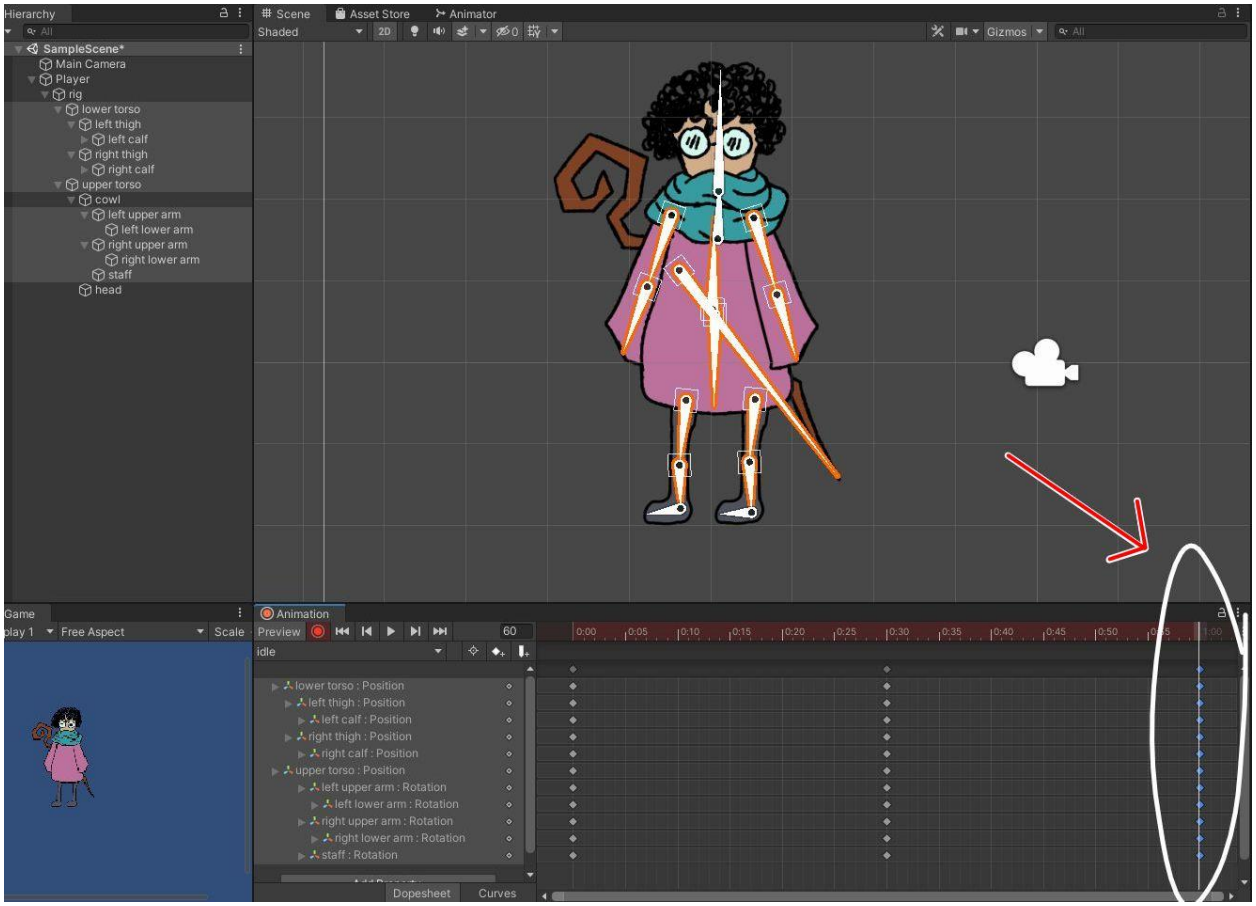
20) Enable keyframe recording mode by clicking the red dot recording button.The timestamp bar will turn red. Move the white line further along the red timestamp bar. How far depends on what kind of animation you are doing and when you want the next keyframe to take place. Adjust the position of the bones using the black dot pivot points, adjust the rotation of the bones by selecting the middle of a bone.



21) When you are done adjusting bones, move the white line back to the beginning of the timestamp bar. Click and drag a box to select all the white diamonds. When selected they will turn blue.



22) **Ctrl+C** copy all the selected diamonds in the start keyframe, move the white line past the keyframe you just created, and **Ctrl+V** paste the end keyframe. In this example the start and end keyframes are equidistant from the middle keyframe. Click play to see how it looks. Click the red record button to stop editing the animation.


Hierarchy
Scene
Asset Store
Animator
SampleScene*
Main Camera
Player
rig
lower torso
left thigh
left calf
right thigh
right calf
upper torso
cowl
left upper arm
left lower arm
right upper arm
right lower arm
staff
head
Shaded
2D
Gizmos
Game
Free Aspect
Scale
Animation
Preview
idle
lower torso : Position
left thigh : Position
left calf : Position
right thigh : Position
right calf : Position
upper torso : Position
left upper arm : Rotation
left lower arm : Rotation
right upper arm : Rotation
right lower arm : Rotation
staff : Rotation
Dopesheet
Curves

Done!