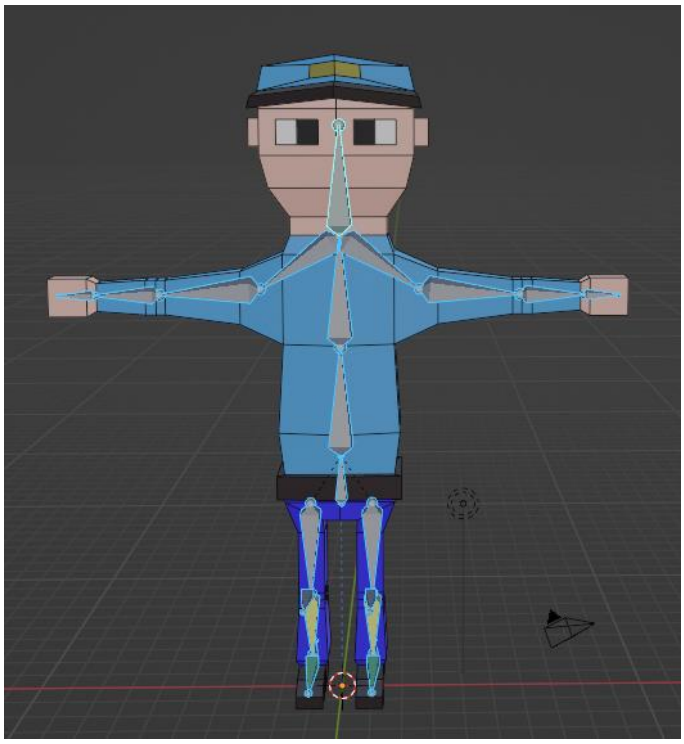
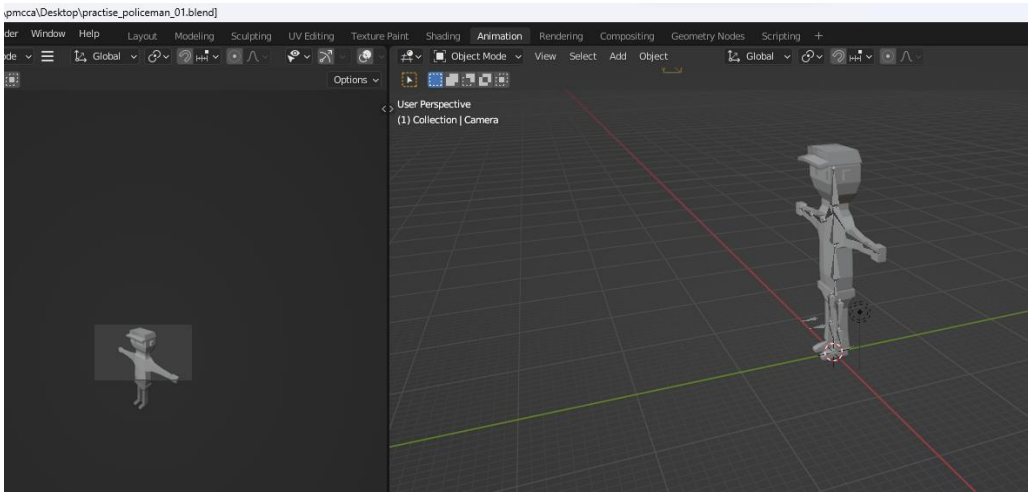
Having finished parts 1 + 2 you should now have a fully rigged and posable Policeman character who looks something like this: -

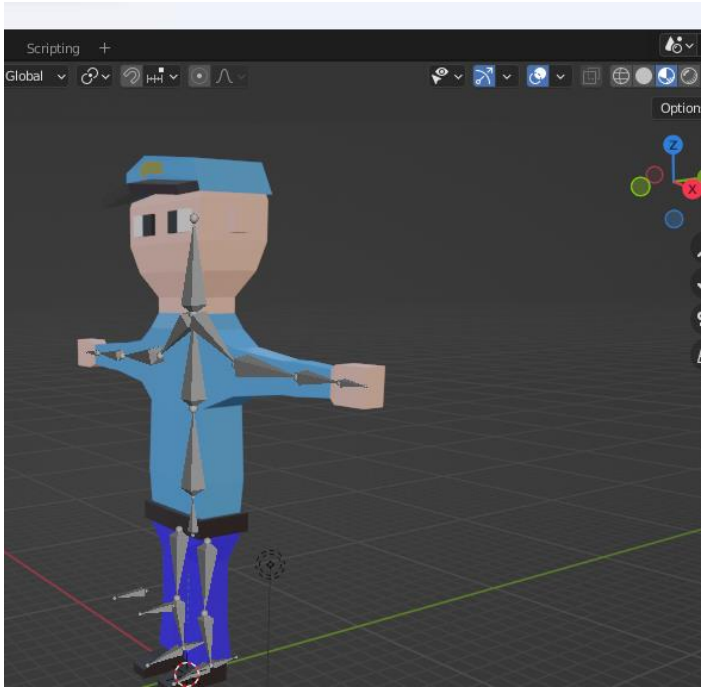


Now to work on animation, we move to the “animate” tab: -

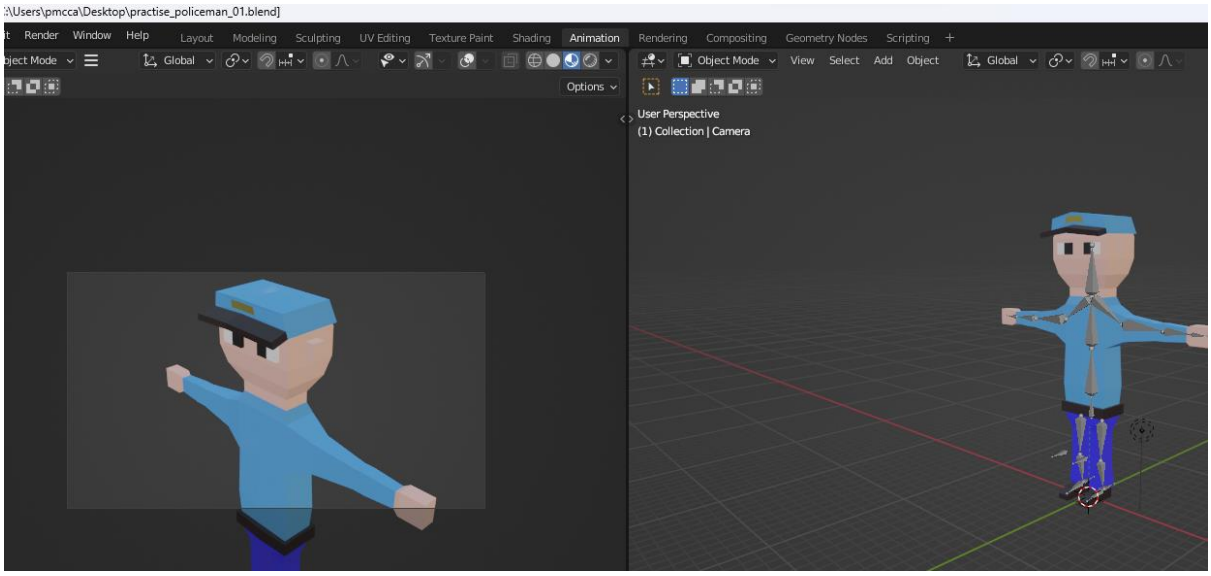


Every is grey initially so let’s fix that firstly –

Switch to the “materials” view to bring in our materials we defined earlier :-



You can do the same on the left window also: -

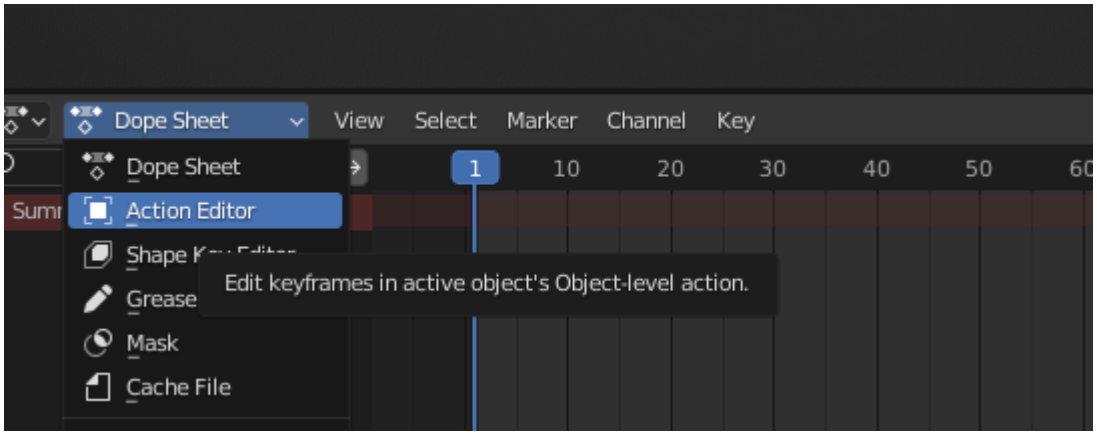


ANIMATION No. 1 – IDLE ANIMATION

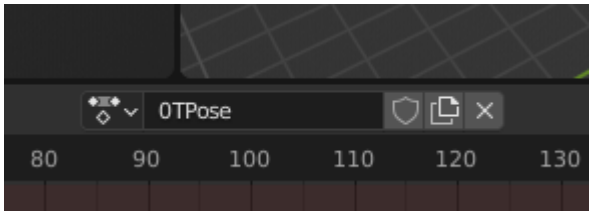
This will be an animation that will play when our character is “at rest” that is not currently moving.

In the right window, select the armature then switch to “Pose Mode”, press A to select all bones in the armature.

On the key frame animation timeline switch from “Dope Sheet” to “Action Editor”: -



Hit the “+ New” to create a new action and firstly create an action “0TPose”:-



The “0” zero character in front means that Unity will interpret it as the default pose when you import it in as an asset, which is useful.

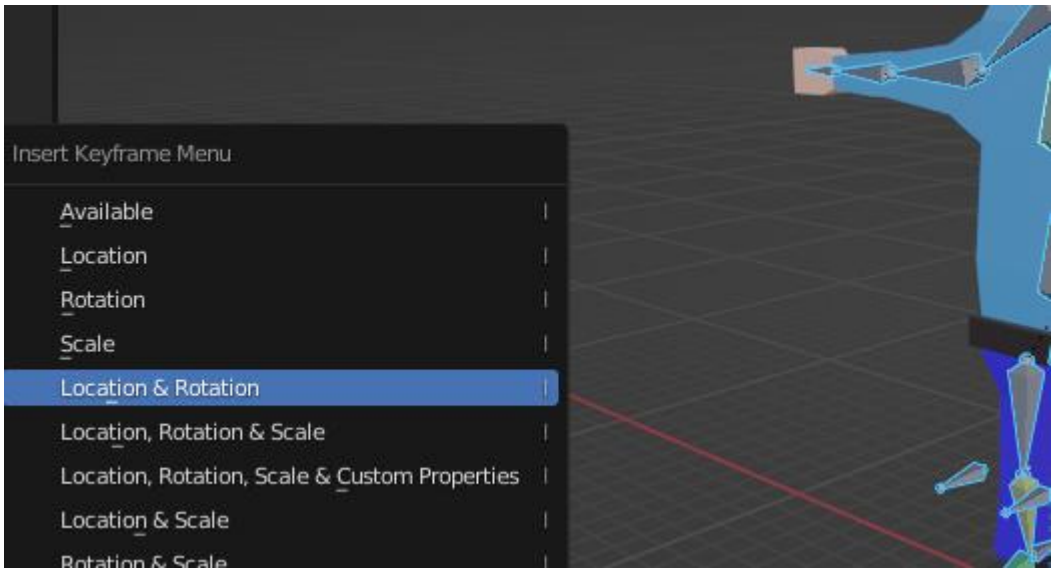
Also it is a good idea to click the shield icon, this protects the animation against getting broken/overwritten from other areas:-

Now for the “T-Pose” they will be no actual animation – but we need to insert one keyframe of the current pose: -

With all of the bones selected, and the mouse in the right window, Press “I” as a shortcut to insert a “keyframe”. [A **Keyframe** tells blender exactly what pose the character should have at a specific time in the animation timeline – and blender is smart enough to automatically animate the character between the keyframes you place on the timeline, the technical term for this is **interpolation**]

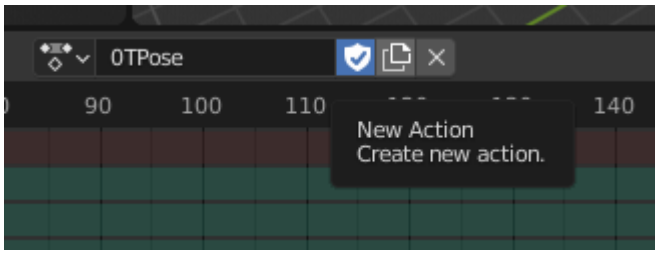
In the popup menu select “Location & Rotation” – this means save a keyframe that describes the current location and rotation of every selected bone of the armature.

You will see a keyframe be added at time = 1 in the timeline: -



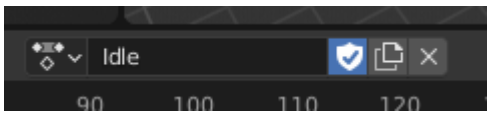
Ok with that one done, now let's create our Idle animation proper –

Click the small icon to the right of the shield icon "New Action": -

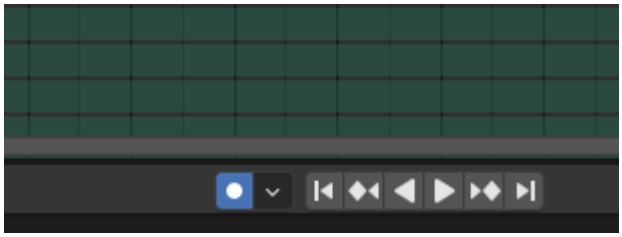


This will create a new action that is a copy of 0TPose – rename it to "Idle": -

Again click the "shield icon" to protect this animation.



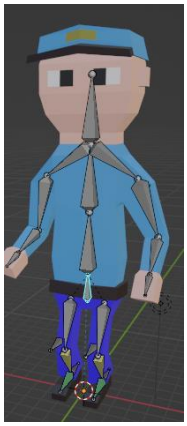
Enable "Autokeying" at the bottom below the timeline: -



Pose our character into a rest pose –

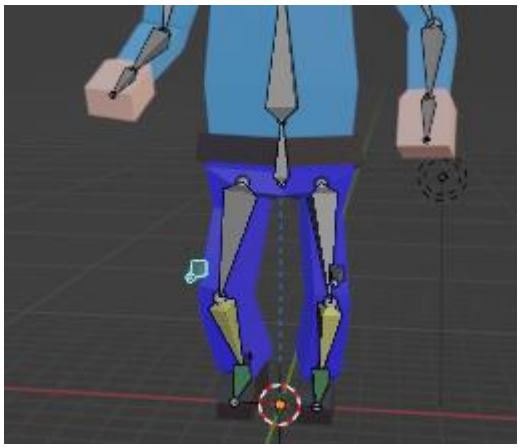
1] Rotate down arms to his side

2] Lower him into a bit of a squat



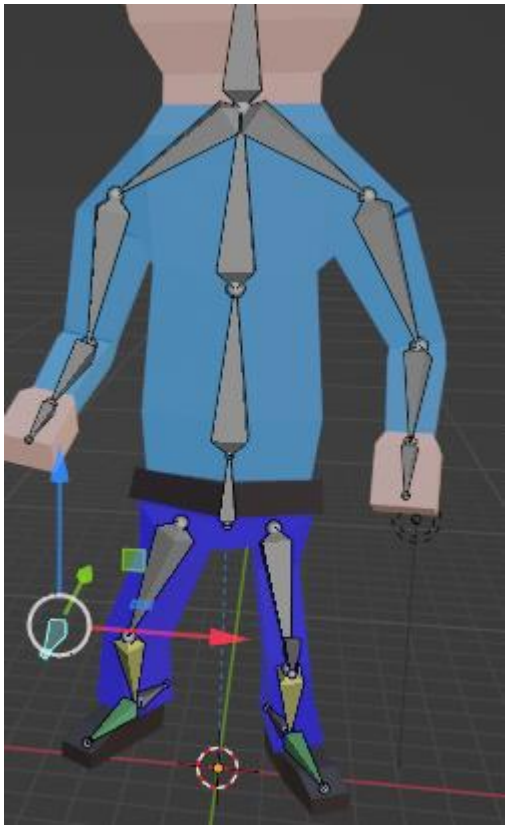
3] Push out his knees a little: -

Note: Perform a “G” on the **pole** bone to do this



Select the ankle bone and move the feet a little wider apart

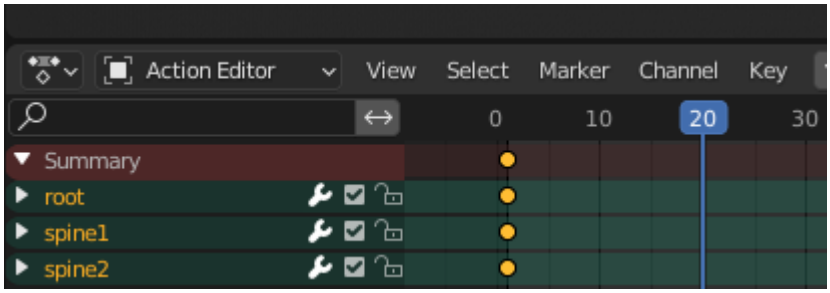
And bring one leg back a little and rotate both feet so pointing outwards



Drop the body a little more – and rotate the torso forward a little so not bolt upright

Push the top of arms back a little for a more natural pose: -

So this is the initial pose in our animation – but we will need to give blender a series of Keyframe poses across the animation timeline, let's do the next one at frame 20, we can do this by moving the timeline slider over to frame 20 now: -



So next decision is – how do we want our character to move at rest?

So he's standing still here but breathing, so we will give him a slightly up and down and chest in and out movement to give this impression.

Make sure "auto-keying" record button is still enabled at the bottom and let's move him into his next pose.

1] G + Z and raise the pelvis bone a little bit

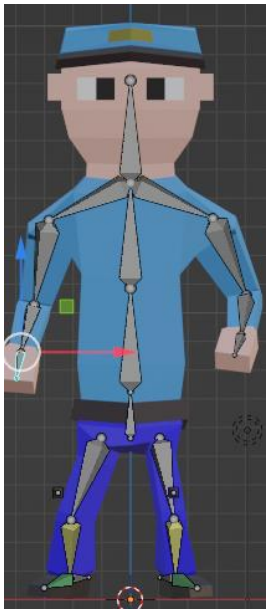
2] Rotate the shoulder blade bones up but rotate the arms in a little at the same time beneath them: -

3] Pick a spine bone and rotate it backwards very slightly

4] rotate the hands in very slightly

Everytime you make these movements now a keyframe is being add automatically in the timeline for us.

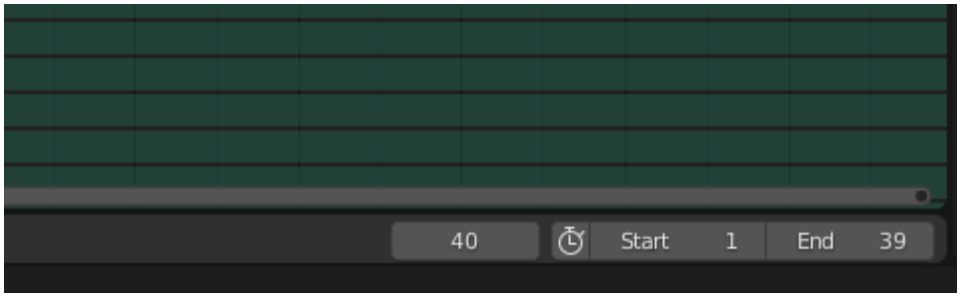
And you can now scroll "scrub" along the timeline and see your initial animaton!



To complete the cycle, let's copy that the initial pose at Frame 1 and Paste it to Frame 40, select all the visible keyframe points with a box initiated by pressing "B" for box select, this automatically selects all the way down – hit CTRL+C, move timeline to 40 and hit CTRL+V. You can now cycle through the full idle animation once. To see all the bone keyframes, ie to scroll down it's the pan command shift+mouse middle button.

[Ed – I had trouble with keyboard shortcut for some reason, had to right click for context menu]

Now if you press play the animation "freezes" after frame 40 plays – we don't need 250 frames in this case – set the end frame to 39 – not to 40 as it actually matches frame 1 and duplicating frames like that can cause glitching : -



While it's not really noticeable in this simple idle animation, it's good practise at this point to ask Blender to turn the animation into a "cycle" animation – this smooths the loop and avoids glitches – it will be more important for the run animation later.

Press "A" with mouse over timeline to select all the keyframes.

Now press Shift+E with mouse again over timeline – and select "make cyclic".

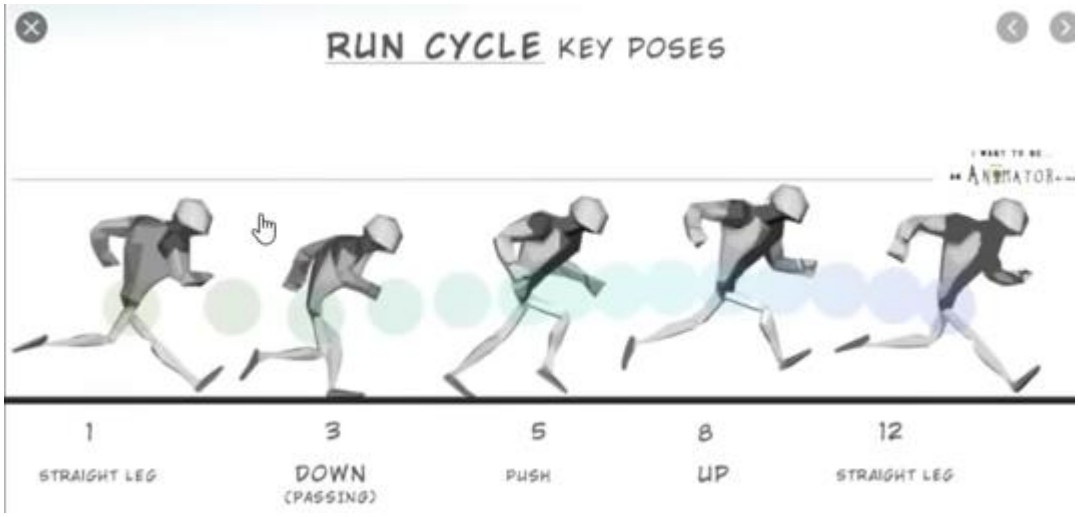
RUN ANIMATION: -

Next we are going to build a run animation for when our character is moving around.

When humans run they "cycle" through a certain number of poses, left leg, right leg and repeat

If you type "run cycle" into the google image search you will get lots of options,

Let's go with this one: -



Note these numbers are actually suggested Keyframe numbers..

This cycle takes us from straight left leg in front to straight right leg in front

Click the "new action" icon and rename this action "Run" and click the shield protection

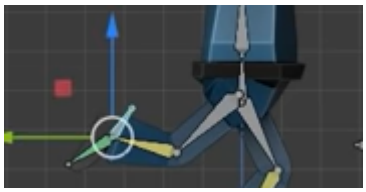
Making sure you are in the new "Run" animation – with all the armature selected - box select all the frame 20 and frame 39 keyframes and delete and select "delete key frames"

Now back on frame one do an ALT+G and ALT+R to fully reset back to the original T pose.

Press Ctrl+Numpad 3 to look at your character from same angle as above run cycle strip.

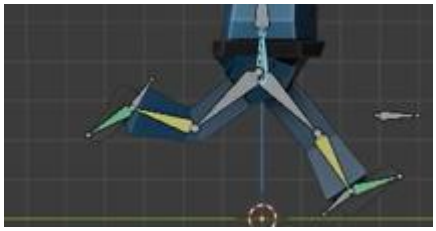
So

1] take the right leg back and pose it like in pose 1



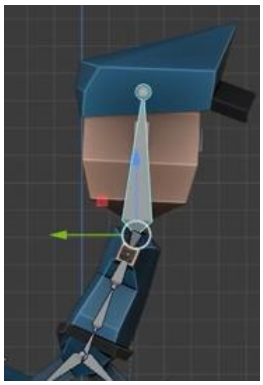
Note you must do the G moves and R rotates on the "target" ankle bone to achieve this

2] Left leg forward and use root to lower the torso a little, ankle should be making good ground connection: -



3] Rotate the torso forward, then rotate the head back a little, so he is still looking forward:

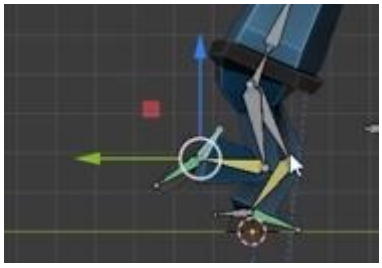
4] Maybe rise the root bone up a little – just make it match the ref image pose 1 as much as possible



So that's frame 1 done so now following the reference image we move on to keyframe 3

1] Drop the root bone down a little, and move left leg under the body.

2] Bring the right leg over to the "passing" position : -

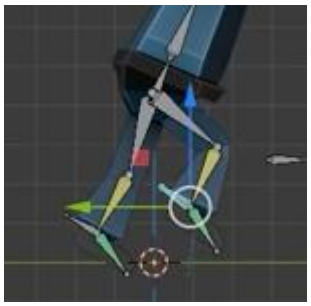


[Leaving the Arms out straight for now, working out the leg animation first]

Advance to Frame no 5: - "Push Pose"

1] Raise the pelvis up

2] Right leg bent forward, left leg straight back: -



Frame 8 – "UP" the spring in the air as you push off with your leg

So

1] Raise pelvis a bit higher again, take him into the air

[Right left forward , left back]

Frame 12 is the same as Frame 1 except the legs are swapped around –

This means there is a special trick we can use from this point,

We can actually ask Blender to complete the animation for us by mirroring!

A to select whole armature – Deselect (double press A0 then Select all key frames so far – and Ctrl + C

Then move to frame 12 and press a special combo Shift + Ctrl + C and this pastes poses “mirrored” !

It is still in “cyclic mode” because we started from idle anim and you should be able to scrub through the whole animation strip and see a good run animation now – right leg then left leg, repeat

To get a solid cycle Copy / Paste all of the frame 1 frames to 20+3 = 23

Similar to idle 1 = 23 so set our new frame end = 22

ANIMATING THE ARMS:

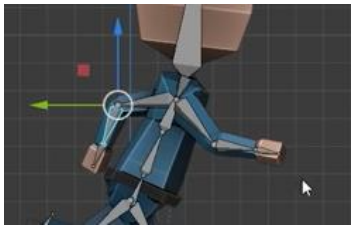
Return to Frame 1 and let’s now animate the arms also.

Rotate both arms down to his sides – once one arm set you can use SHIFT+CTRL+V on the other side to achieve exact same angle [this worked well for me too]

Right arm should go forward as right leg goes back.

So right arm forward now and pose something like this:

Conversely, at this point left arm should be fully back behind him, pose it like this:-

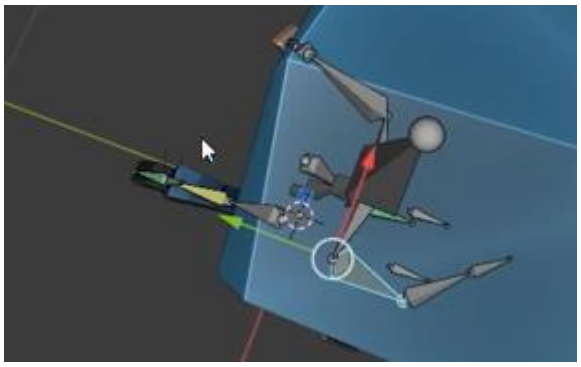


Arms are easier to animate than the legs,

We can simply select all the arm bones, CTRL + C to copy pose to buffer.

Advance to frame 12 and SHIFT+CTRL+V to paste the mirror pose

Still a bit “Stale” i.e. basic let’s improve the movement a little: -



Frame 1 bring right arm across his body like above.

Now Ctrl+C copy of the upper and lower arm bones. And Shift + Ctrl + V at frame 12.

And normal Ctrl+V at frame 23

Final tweaks: -

At Frame 1 – tilt to the side and use R and Z to twist a little

And again CTRL+V of just this bone – then Shift+Ctrl+V at Frame 12 and CTRL+V frame 23

And Last one: -

Select Spine2 bone & rotate it slightly forward **at Frame 5**:

Ctrl+V of just this bone, advance to frame 16 and hit – Shift+Ctrl+V

And we're done!!