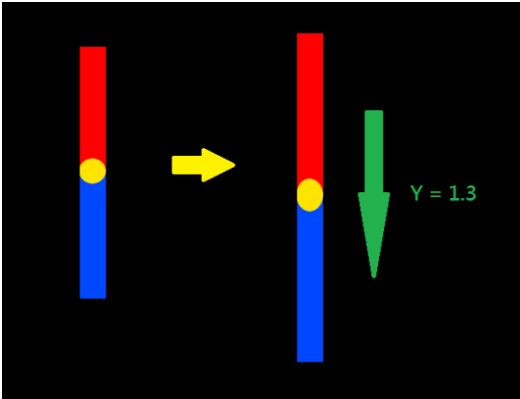


Guide to make long/short legs by **ABMX** by Rem27

Step one. Increase/Decrease leg length.

It is important to adjust the leg length in a proper way. Many people just change the thigh Y scale to make longer/shorter legs but this is definitely not a good way to do the trick.

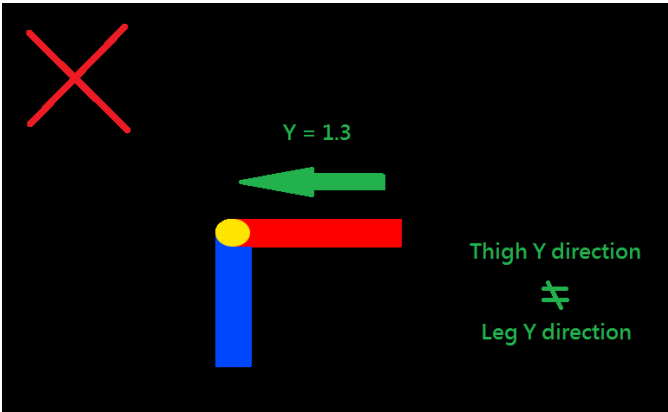
For example, let's say you want long legs and you change **Thigh & Leg** scale Y to 1.3



It looks good when the character stand straight. However, when the legs bend they become skewed.

The **Thigh & Leg** bone changes the leg's scale with respect to direction of the thigh.

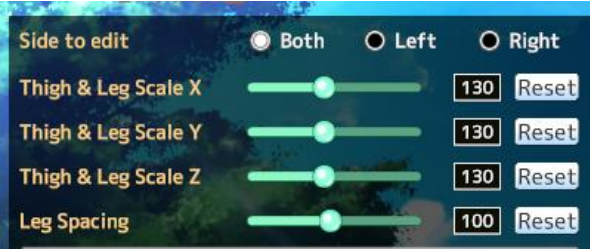
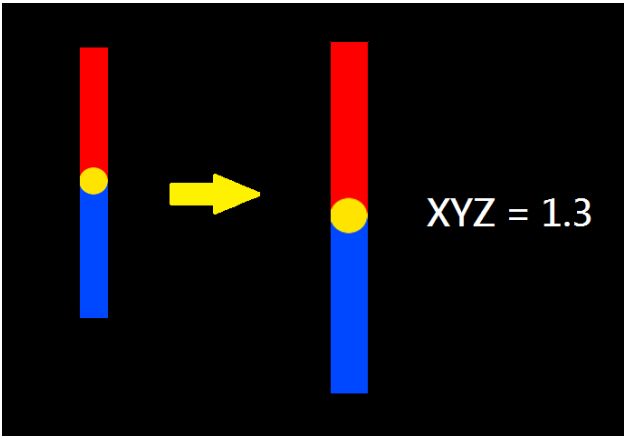
The character's legs will be thicker but not longer when the legs bend if you try to make longer this way.



The effect may not be significant if you only make slightly change on Y, but I think you definitely want to avoid the problem. Here is the method to change leg's length properly.

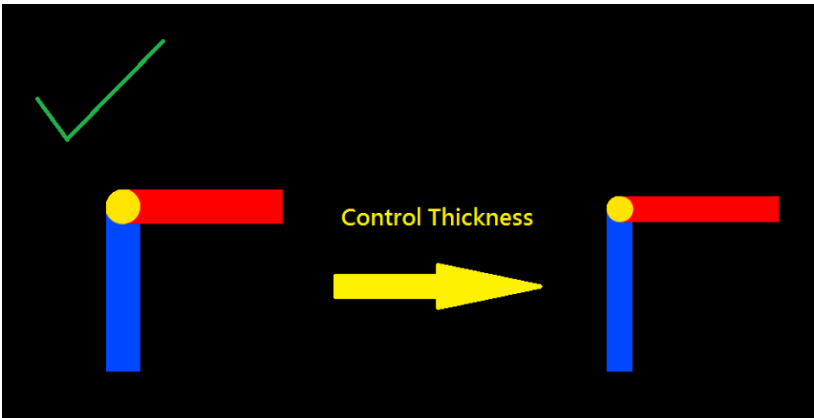
1. Adjust XYZ make bigger/smaller leg.

Make sure three values are the same. Making equal changes to all directions prevent the legs from becoming skewed on orientation.



2. Thickness control (Scale Proportionally)

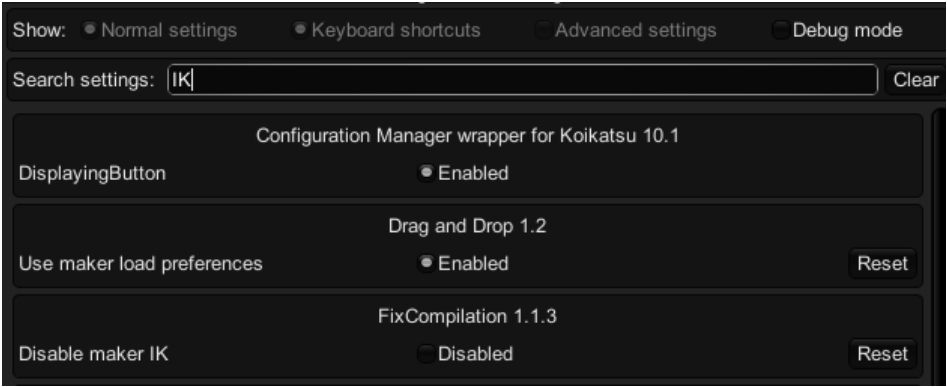
100/1.3 = 77



If you want to make a smaller/shorter leg, then make it thicker.
This applies not only to the legs but also the shoulders, arms, spine, etc., for any body parts that have joints. You should follow the rule to avoid skewing problem.

Step two. Fix IK position

Next we will need maker IK for tuning, so please uncheck “Disable maker IK” in settings, then restart the game.

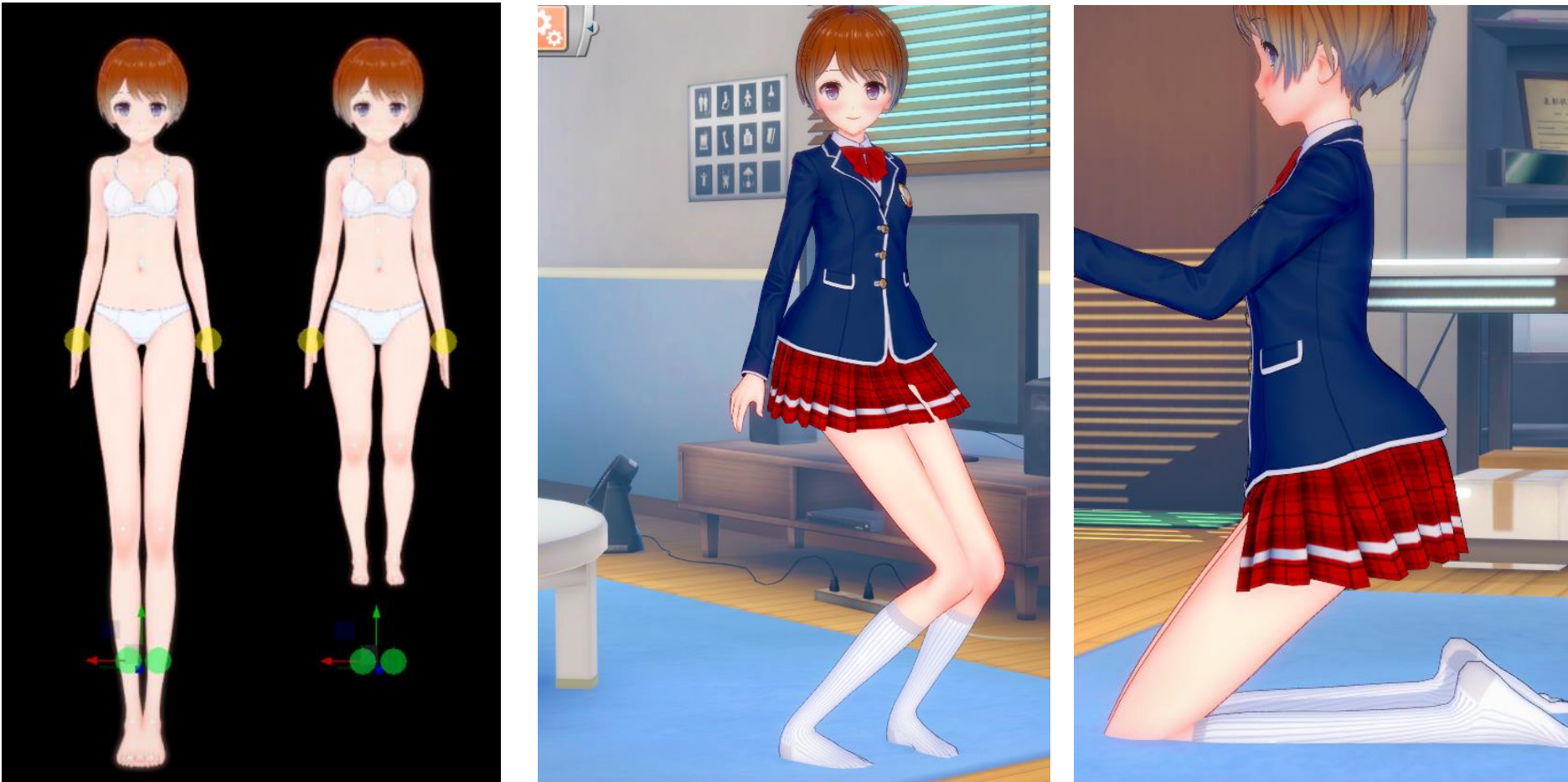


After you enable the maker IK, the following examples are what we see after we give default-chan long & short legs in step one.
The legs and arms buckle.
Load the card into Studio and you can see their feet are not on ground height.



Imagine there are feet IK at ground height. The feet bones will approach the IK position.
For long legged character, the legs bend. For shorter legged, the whole body is pulled down since the legs don't have enough length to reach that point, with the arms bending too.

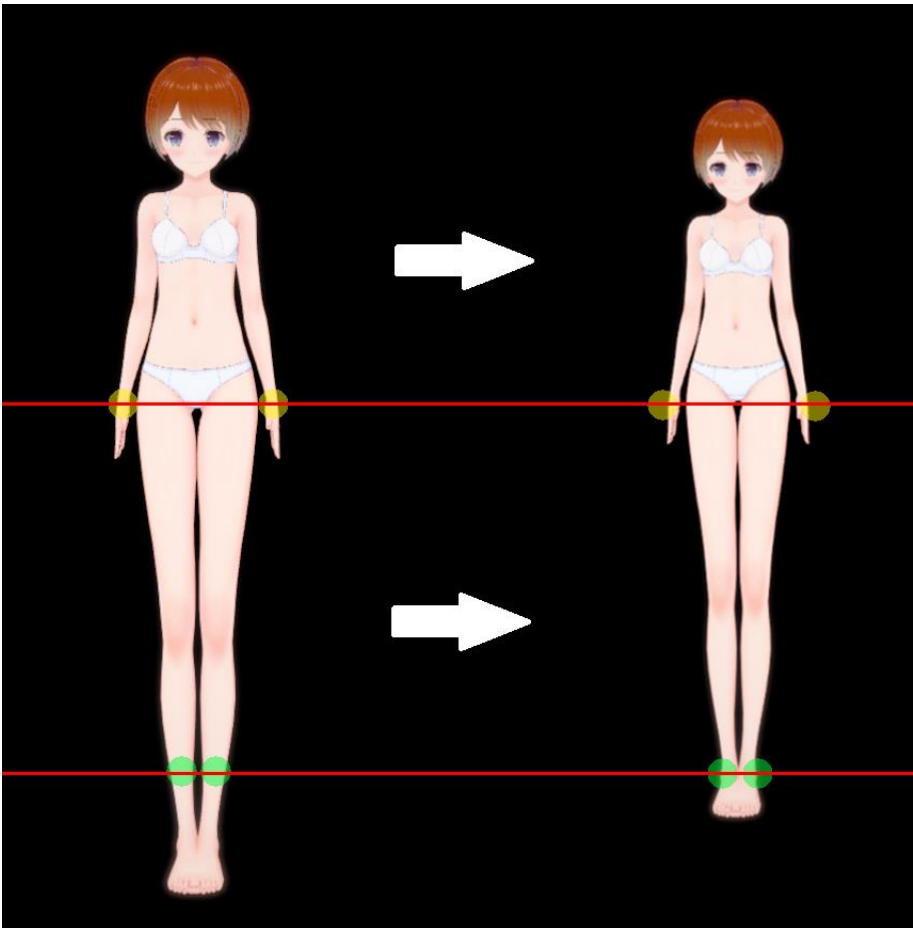
If your character does not stand straight in Maker, that means IK bones are in wrong position, resulting in weird animations in main game.



Many people say “ABMX breaks animation”, but I would tell you that’s not true.
IK dislocation breaks animation, not ABMX. ABMX may affect IK, but we can also lighten the effect.
The problem only becomes bigger if you use extreme values so don't try them.

3. Adjust scale of cf_j_hips

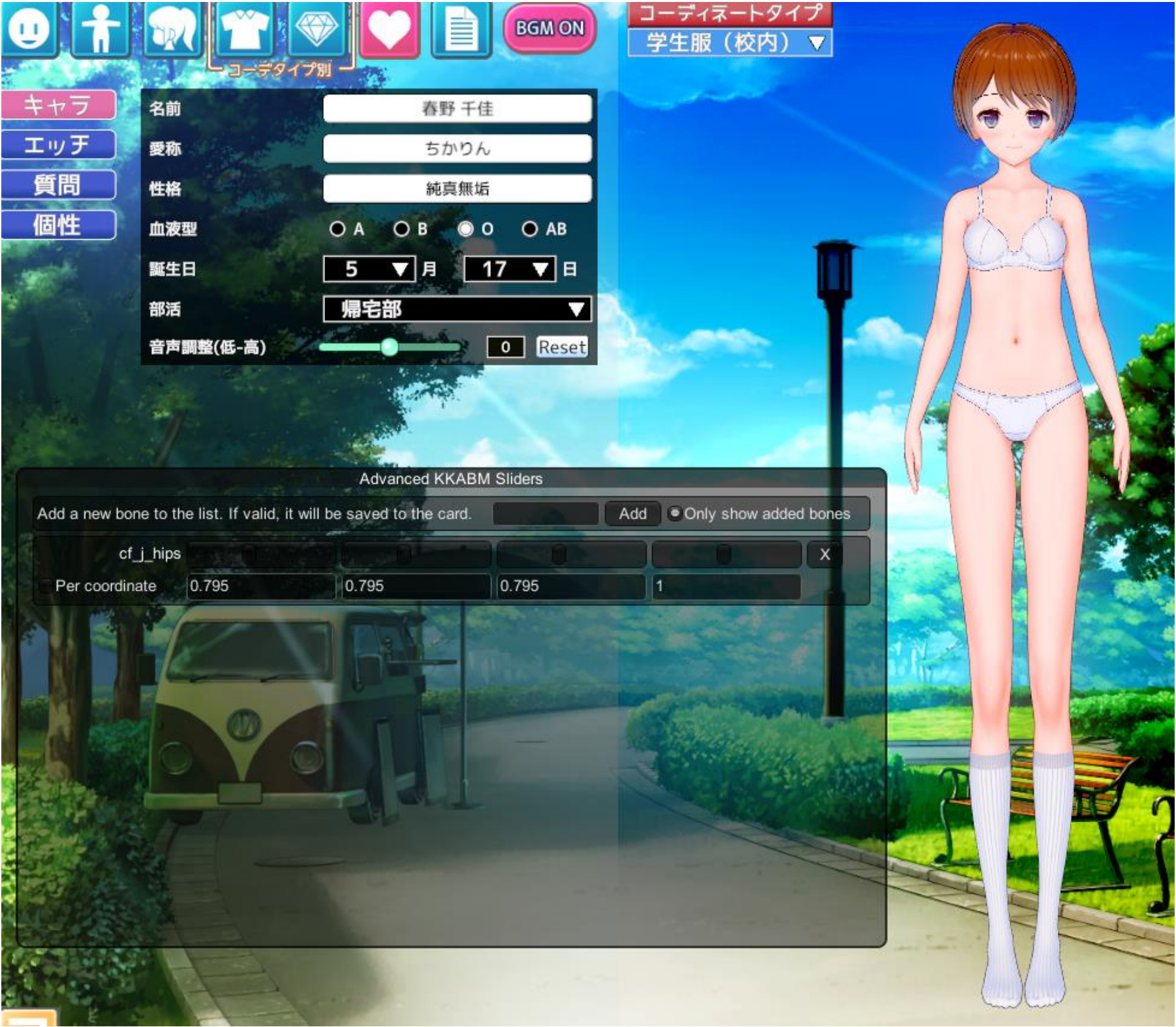
cf_j_hips controls body scale, but there is a little bit difference between this and the body scale slider which was implemented in the UI, since adjusting cf_j_hips doesn't affect IK bone position.
I call it IK fix but actually we are going to fix the body scale, increasing/decreasing it to match IK postion.



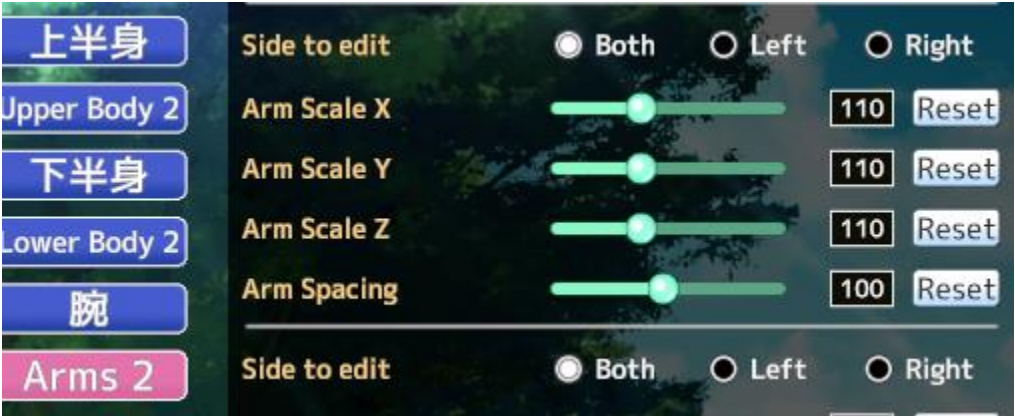
You will need to add the bone in ABMX’s advanced mode.
Open advanced mode by ticking the box in the lower right corner. Type “ cf_j_hips ”, then press Add.
Enable “Only show added bones” to give you a clear view.



Increase/decrease scale until the character stands straight.



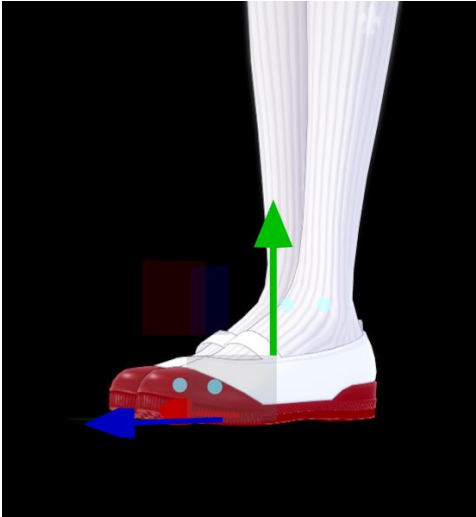
Slightly increase **arm** scale with people with longer legs since they usually have longer arms and this also improve animation performance. Arms bend a little bit but its okay, they are not bending because her legs are too short. She won't have a problem in animation by having long arms.



Done, save the card and play with her in main game.

Result

Studio:



Main game:

