



Substitutions

Animation Pro is a 2D animation App. When you create a figure in Animation Pro, it is created in two dimensions and, as a result, it can only be rotated around its Z-axis (imagine the Z-axis as a line coming directly out of your iPad screen).

So if you wish to make a figure rotate, for example, around its Y-Axis (i.e. appear to turn to the left or to the right) then you'll need to create different 'versions' of that figure and **substitute** them into your animation (see right).

Fortunately, Animation Pro has a few tricks up its sleeve to make this a little easier for you.

TOPICS

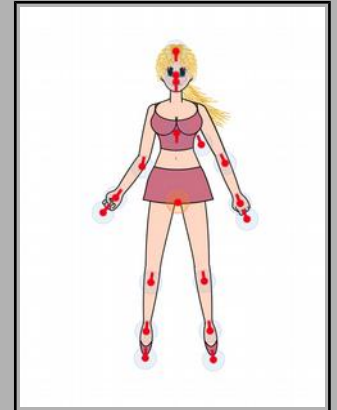
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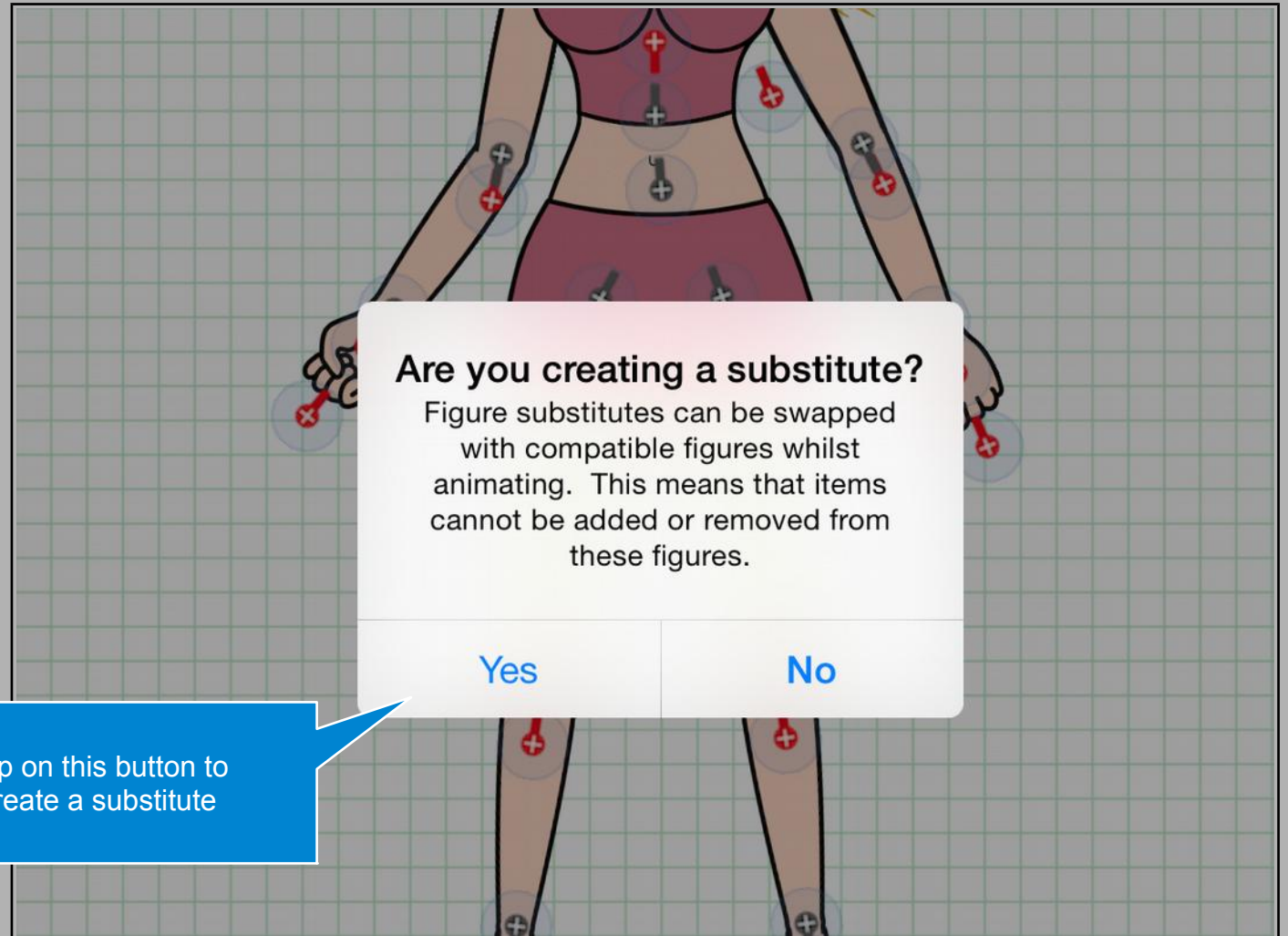


Creating Substitutes

OK, so what's the big deal here? Why not simply create another figure and swap it whilst animating? Well, that's certainly possible, but Animation Pro won't know that they're actually the same figure. So if the figure is in the process of changing colour, for example, Animation Pro won't be able to create 'tweens' for the transition. Furthermore, certain adjustments made to the original figure, such as colours and tints, won't be automatically carried across to the new figure. In other words, there's quite a few reasons why its best to create 'substitutes'.

Whenever you open a figure in the 'Figure Editor' or save a figure in the 'Figure Editor', Animation Pro will ask if you are creating a substitute (see right).

If you haven't checked out the 'Figure Editor' yet, please click on the 'Creating Figures' topic, left, and check out the documentation. It's a good read (although I suspect that it will never makes the New York best seller list).



Please note: When creating a substitute a number of controls will be removed from the 'Figure Editor' screen:

The screenshot shows the 'Figure Editor' interface. At the top is a toolbar with icons for undo, redo, and a checkmark. The main area displays a female figure with various joints marked by red dots and black lines. A blue callout box points to the top toolbar, stating: 'The 'Remove' menu is not present – it is not possible to remove items from a substitute'. Another blue callout box points to the bottom toolbar, stating: 'It is not possible to change the 'flexible', 'static', 'bendable' or 'stretchable' properties of an item in a substitute. All of those controls will thus be unavailable when creating a substitute.'. The bottom toolbar includes a 'Creating Substitute' section with icons for item types (line, circle, cluster, arc, text), a zoom section with a magnifying glass, a crop icon, and a 1x zoom button. To the right are two sliders for 'Item Z-Order' and 'Line Width'. The bottom right corner displays 'Figure width: 323, height: 656'.

The 'Remove' menu is not present – it is not possible to remove items from a substitute

It is not possible to change the 'flexible', 'static', 'bendable' or 'stretchable' properties of an item in a substitute. All of those controls will thus be unavailable when creating a substitute.

Creating Substitute

Item Z-Order

Line Width

Figure width: 323, height: 656


Substitutes must have the same number of items as in the figures they're replacing. Those items must also be of the same 'type' (i.e. 'static', 'flexible', 'bendable', 'stretchable' etc). So all of the controls for adding or removing items, or changing the item types, will no longer be available (as shown above).

Onion Skin

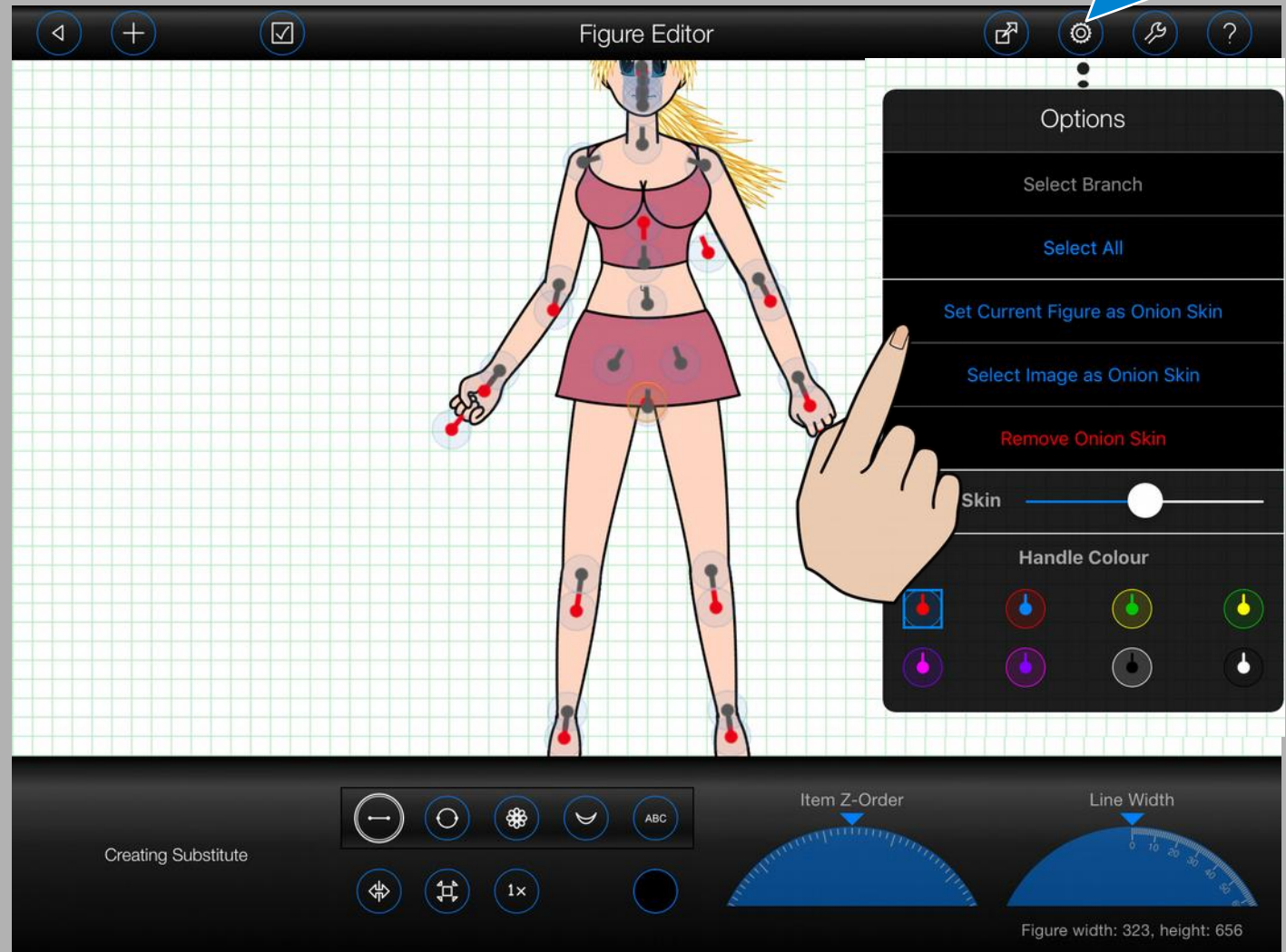
When creating a substitute, it can be helpful to see what the original figure looks like whilst making your changes.

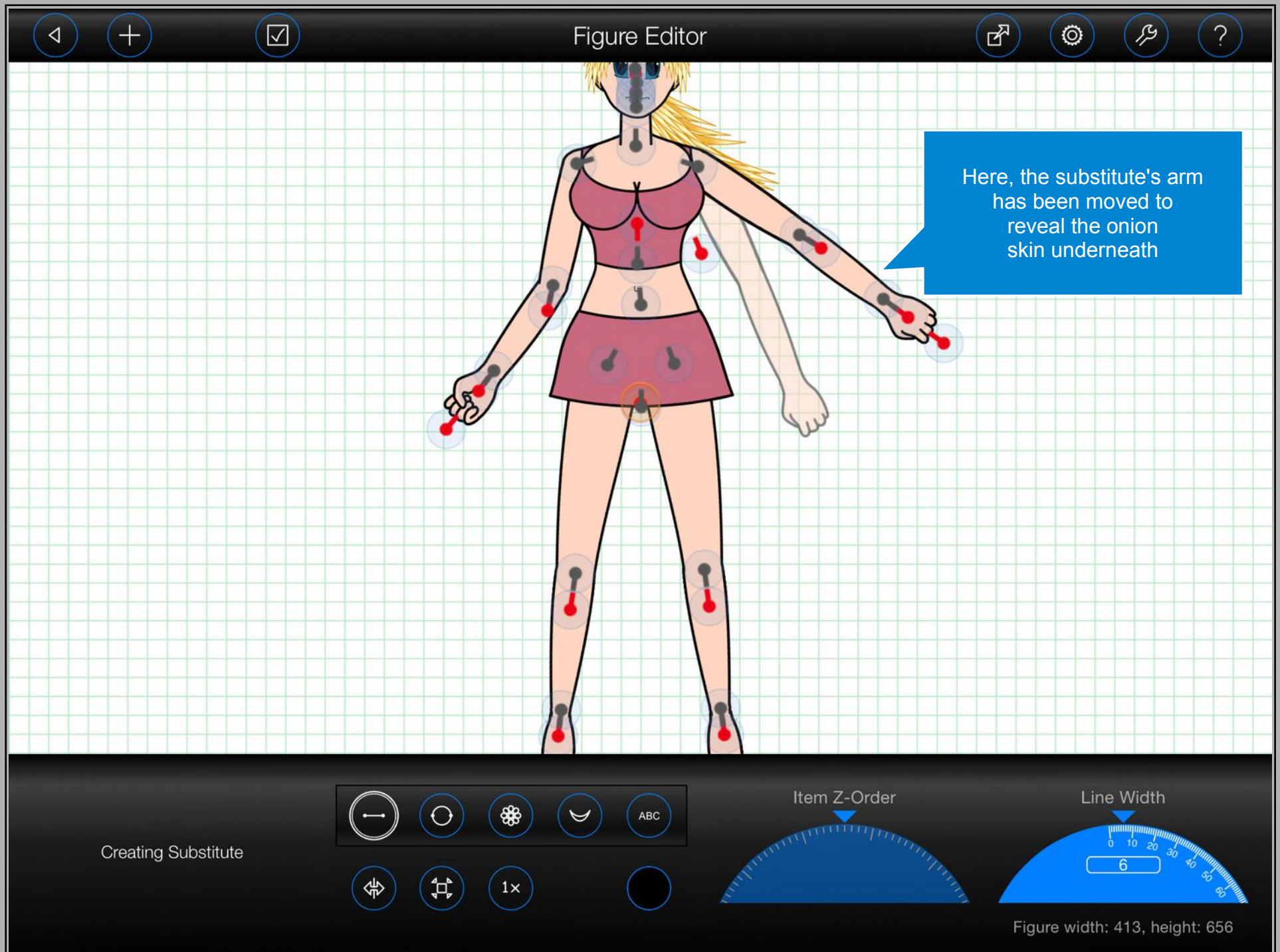
If, for example, you are creating a side-on view of an existing character, it can be useful to see whether the character, and all of the items that make it up, are the same size.

This can be achieved by turning the existing figure into an 'onion skin' before making any changes to it.


1. Tap on the  button at the top of the screen.
2. Select 'Set Current Figure as Onion Skin'

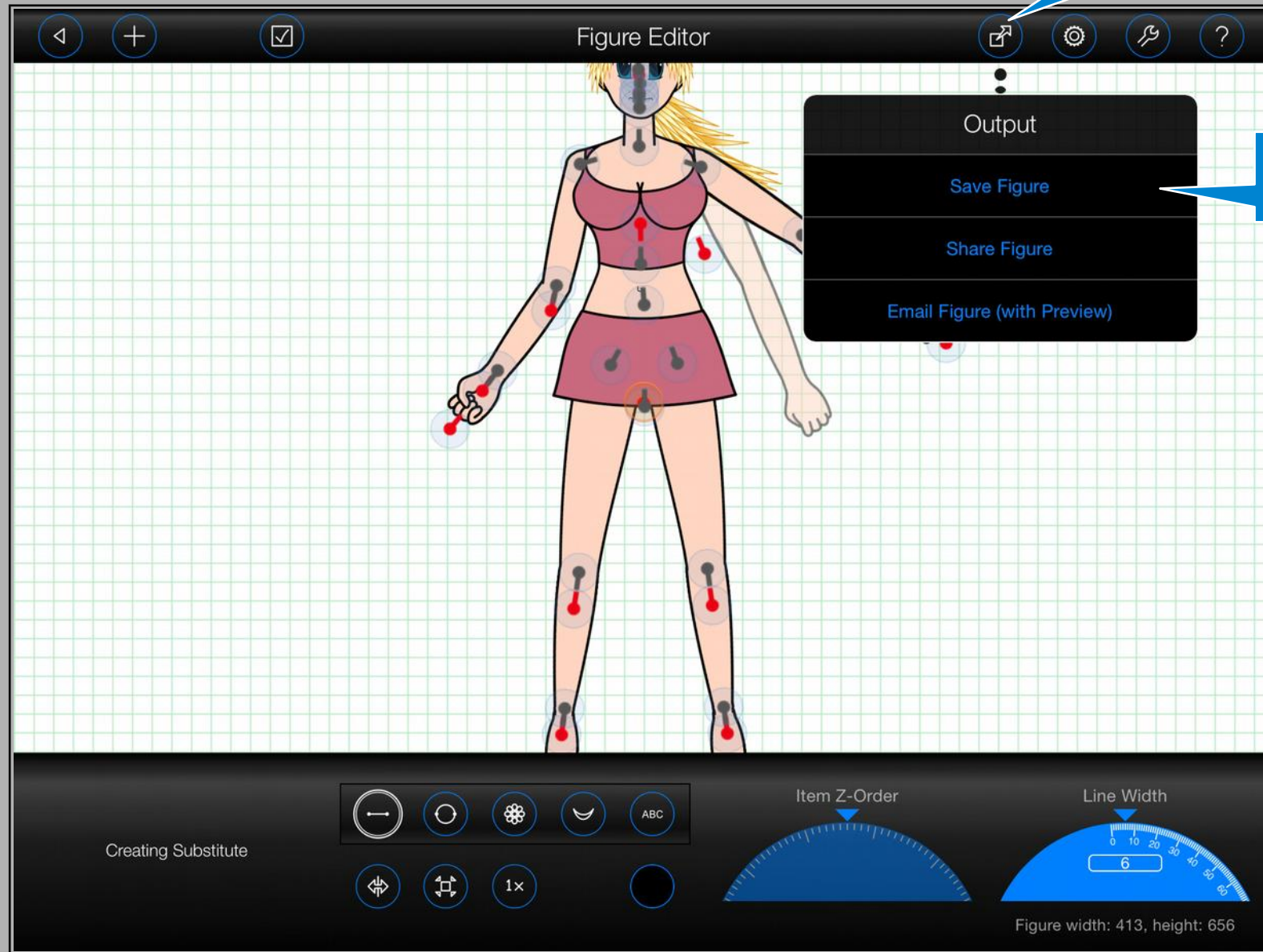
Tap here to open the 'Options' menu





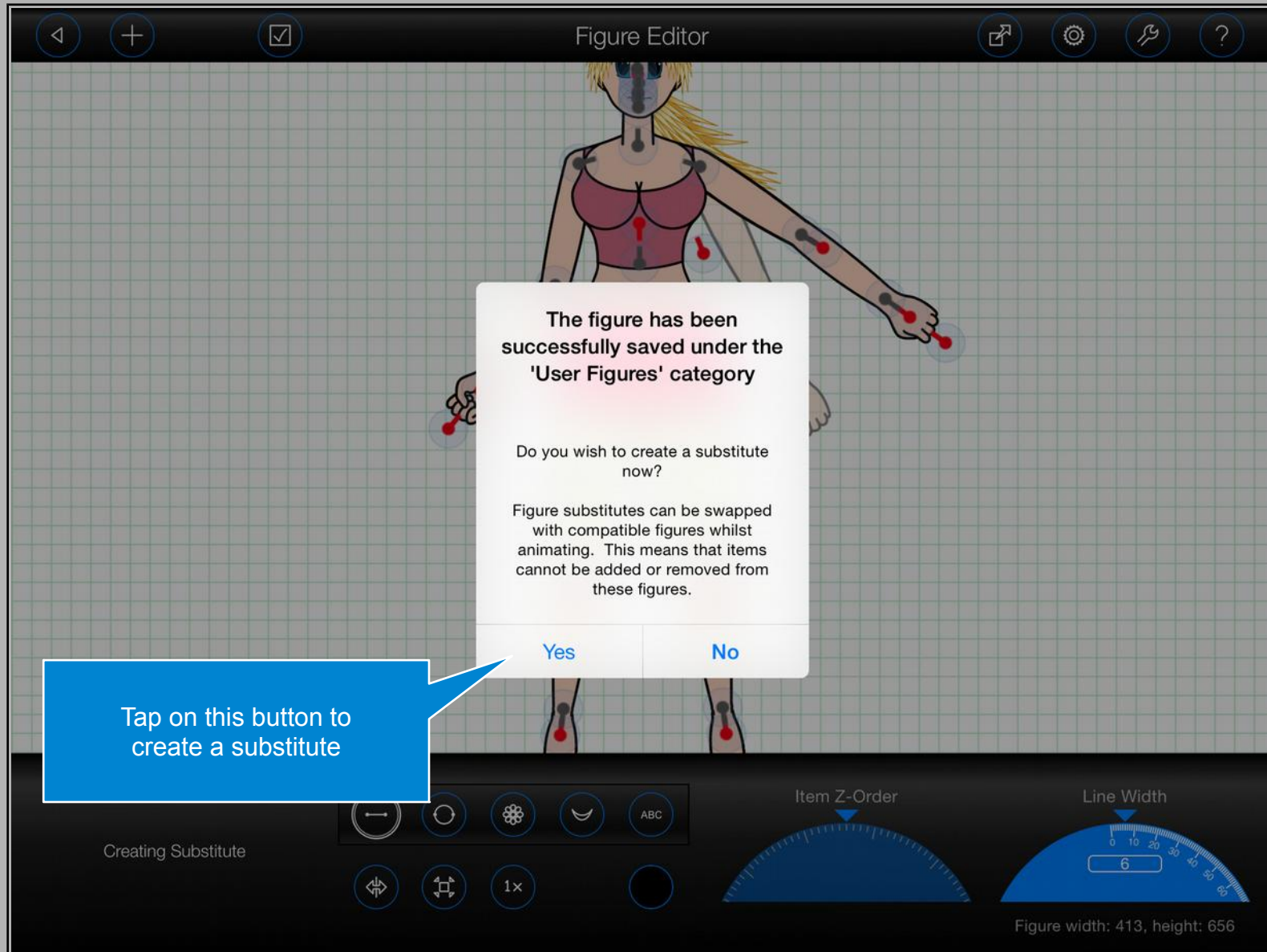
Saving a Substitute

Press the  button at the top of the screen:



The substitute will be saved under the 'User Figures' category within the file manager (see 'File Manager', left, for more information).

Again, you will be prompted to create a substitute. Select 'Yes' if you'd like to create another substitute:



Using Substitutes in an Animation

Let's assume that we've used the 'Figure Editor' to create a side-on view (substitute) for the 'Original Figure' shown right:

Let's also assume that we're now in the process of creating an animation and wish to substitute the original figure with the side-on view of that figure:





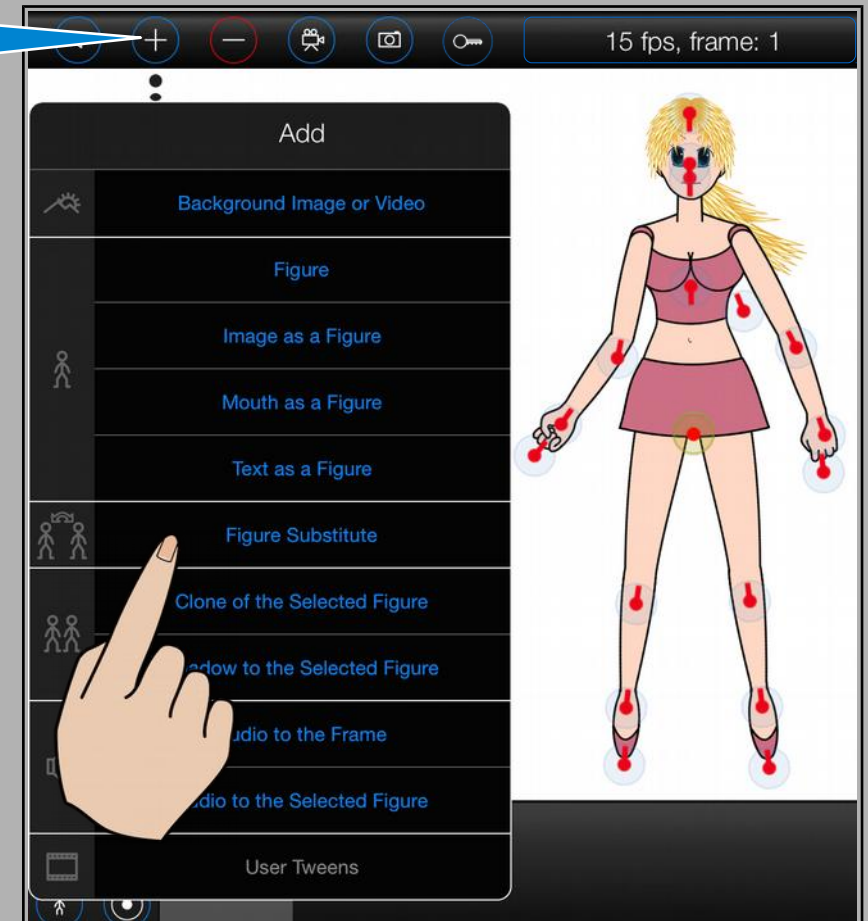
Original Figure



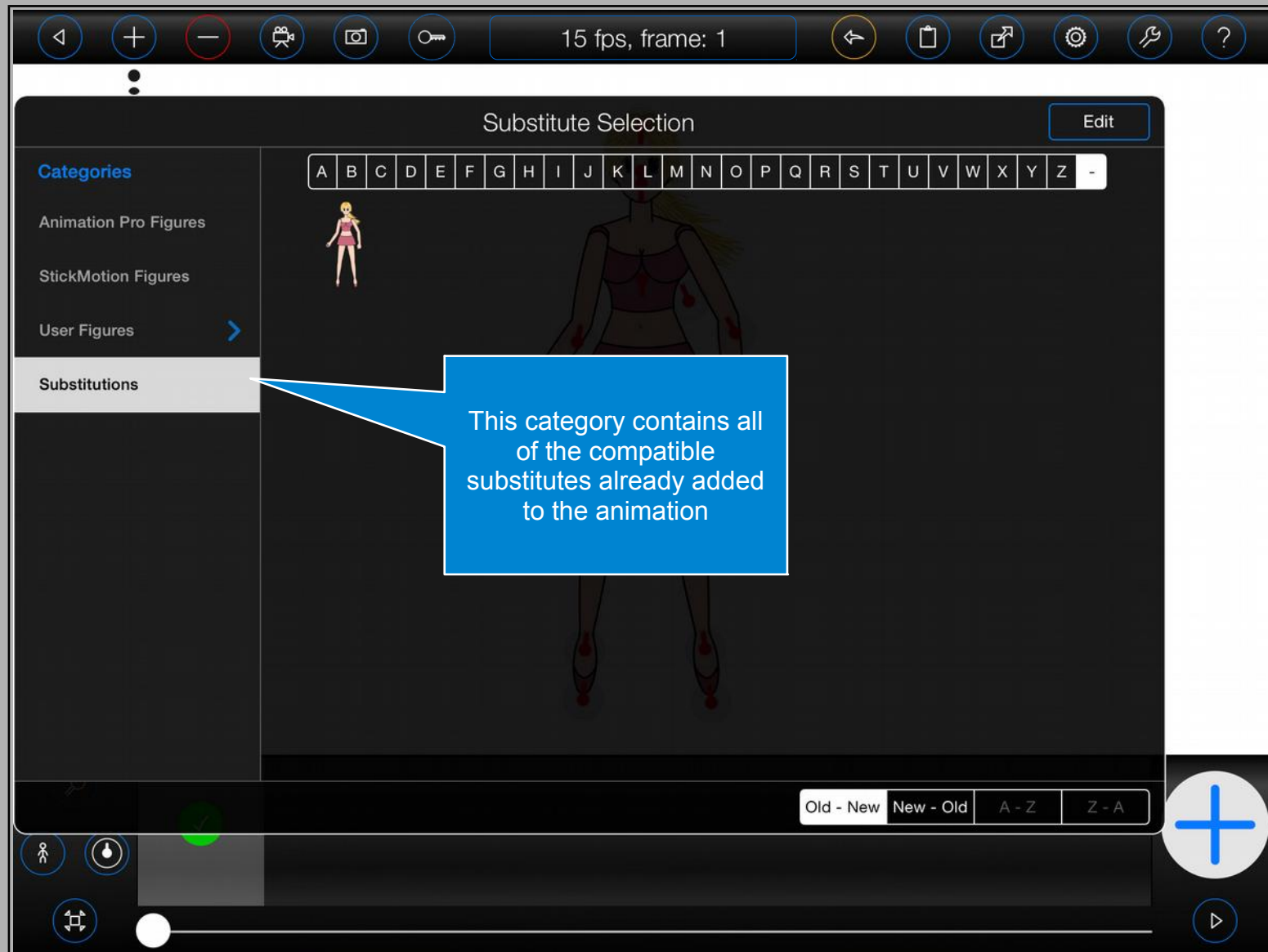
Substitute

Press this button

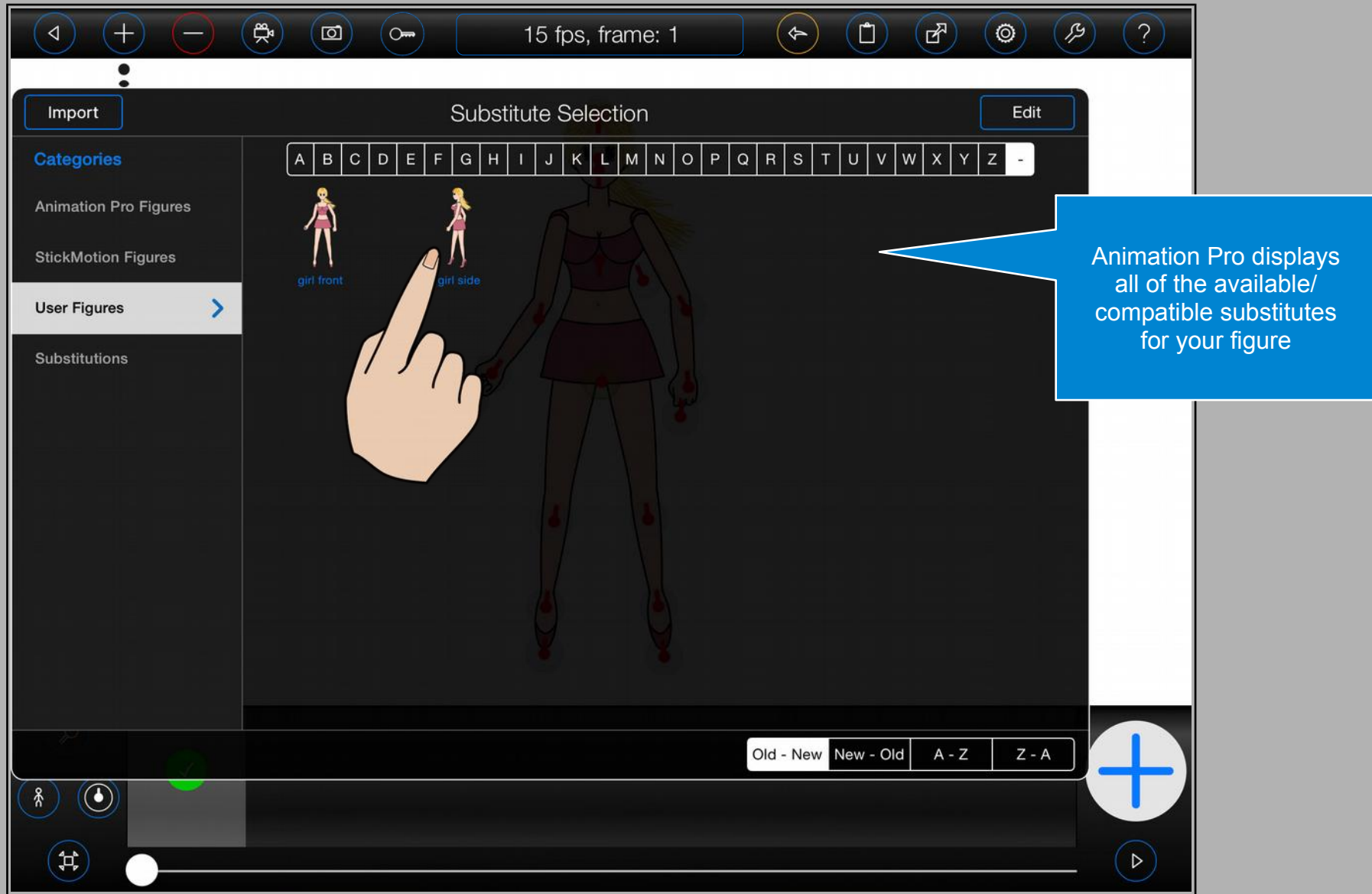
1. Tap on the figure's anchor point, , to select it.
2. Tap on the  button to open the 'Add' menu.
3. Select 'Figure Substitute' from the 'Add' menu.



By default, Animation Pro will open the 'Substitute Selection' file manager and will display all of the substitutes, for the currently selected figure, that have been added to the animation. In this example, below, there is only one figure (which is actually the figure that we wish to substitute as it is the only 'compatible' substitute already in the animation):

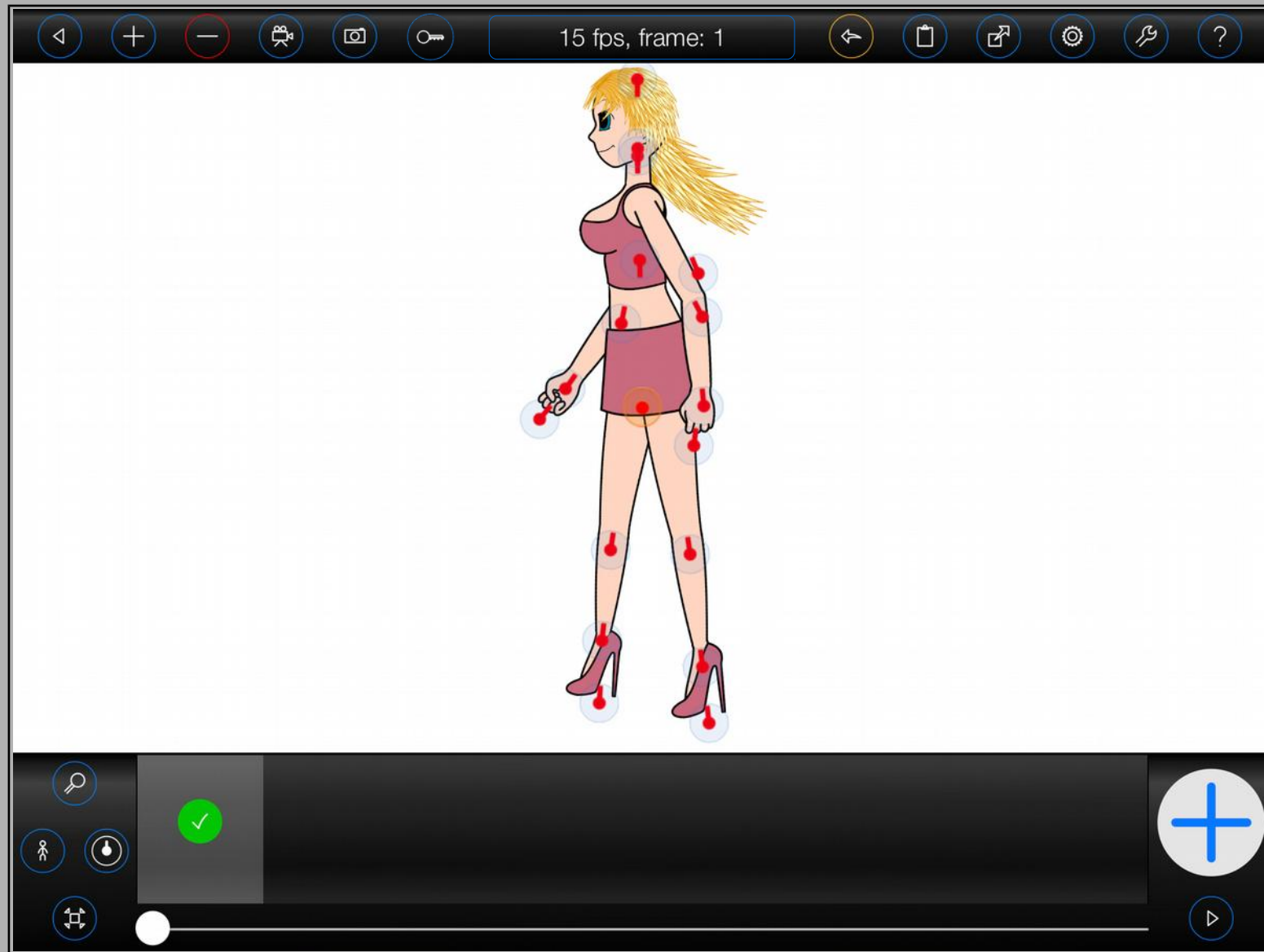


Tap on the other categories to find the compatible substitutes not already present in your animation. In this case, we will select the 'User Figures' category (as that is where we've saved the side-on view of our figure):



4. Tap on a figure to select it.

Animation Pro will replace the figure with the selected substitute:



This figure will be automatically added to the 'Substitutions' category in the file manager. In other words, as you add substitutions it will become quicker to toggle between them.

Important Considerations

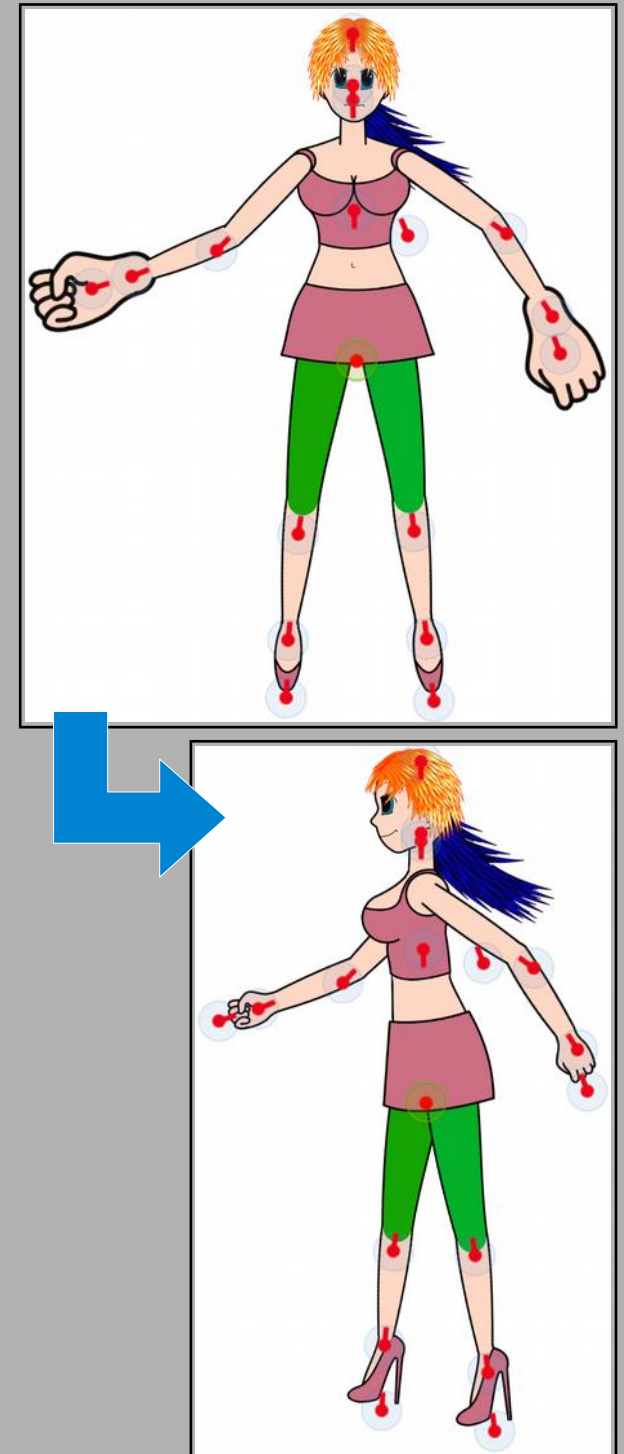
When a figure is substituted, Animation Pro tries to retain the state of the original figure. In other words, Animation Pro transfers as many of the changes made to the original figure over to the substitute as possible.

This includes:

1. Clone and tween settings
2. Highlight settings
3. Figure opacity, colours and tints
4. Item opacity, colours and tints
5. Effects – highlights, shearing, scaling, blurs, distortions

Not included:

Any adjustments that would most likely ruin the geometry of the substituted figure, such as the position, size or rotation of the items in a figure (many of these items would have been adjusted whilst creating the substitute).



Finally, consider what would happen if Animation Pro automatically 'tweened' from Figure A to (substituted) Figure B below:

Figure A



Tween



Tween



Figure B



In most cases, as shown above, the results would be less than desirable. So Animation Pro does not attempt to 'tween' across figure substitutions. The down side of this is that your figures may appear to 'pause' briefly across the substitutions when 'tweening' is turned on:

Figure A



Tween



Tween



Figure B



To get around this issue, Animation Pro allows you to create your own 'tweens', known as 'user tweens'. For more information on 'user tweens' please refer to the 'Tweening' topic (left).