



Creating Figures

Animation Pro comes with a whole bunch of figures for you to use in your animations. But it also includes a 'Figure Editor' in which you may construct your very own. The 'Figure Editor' may be accessed by selecting 'Create a Figure' from the 'Create/Crop' menu (on either the 'Projects' or the 'Animation' screen) as shown below.

TOPICS

Things to Know First*

[Screen Overview](#)

[The Basics – How to Create a Figure by Example](#)

[Adding Items to a Figure](#)

[Replacing Items in a Figure](#)

[Mouths](#)

[Text](#)

[Removing Items From a Figure](#)

[Removing an Item](#)

[Removing a Branch](#)

[Removing Everything](#)

[Creating a New Figure](#)

[Opening an Existing Figure](#)

[Saving Figures](#)

[Saving Over an Existing Figure](#)

[The Clipboard](#)

[Copying an Item](#)

[Pasting an Item](#)

[Copying a Branch](#)

[Pasting a Branch](#)

Press this button



SCROLL UP FOR MORE TOPICS

TOPICS (Continued)

[Item Attributes](#)

[Pivots](#)

[Pivots + Stretches](#)

[Pivots + Bends](#)

[Pivots + Bends + Stretches](#)

[Flipping](#)

[Flipping a Figure](#)

[Flipping a Branch](#)

[Flipping an Item](#)

[Setting an Item's Z-Order](#)

[Display Options](#)

[Dealing with Overlapping Controls](#)

[Adjusting Lines and Circles](#)

[Adjusting an Image](#)

[Handle Colours](#)

[Undoing Changes](#)

[Testing Figures](#)

[Sharing Figures](#)

[Onion Skins](#)

[Creating an Onion Skin from a Figure](#)

[Creating an Onion Skin from an Image](#)

[Onion Skin Options](#)

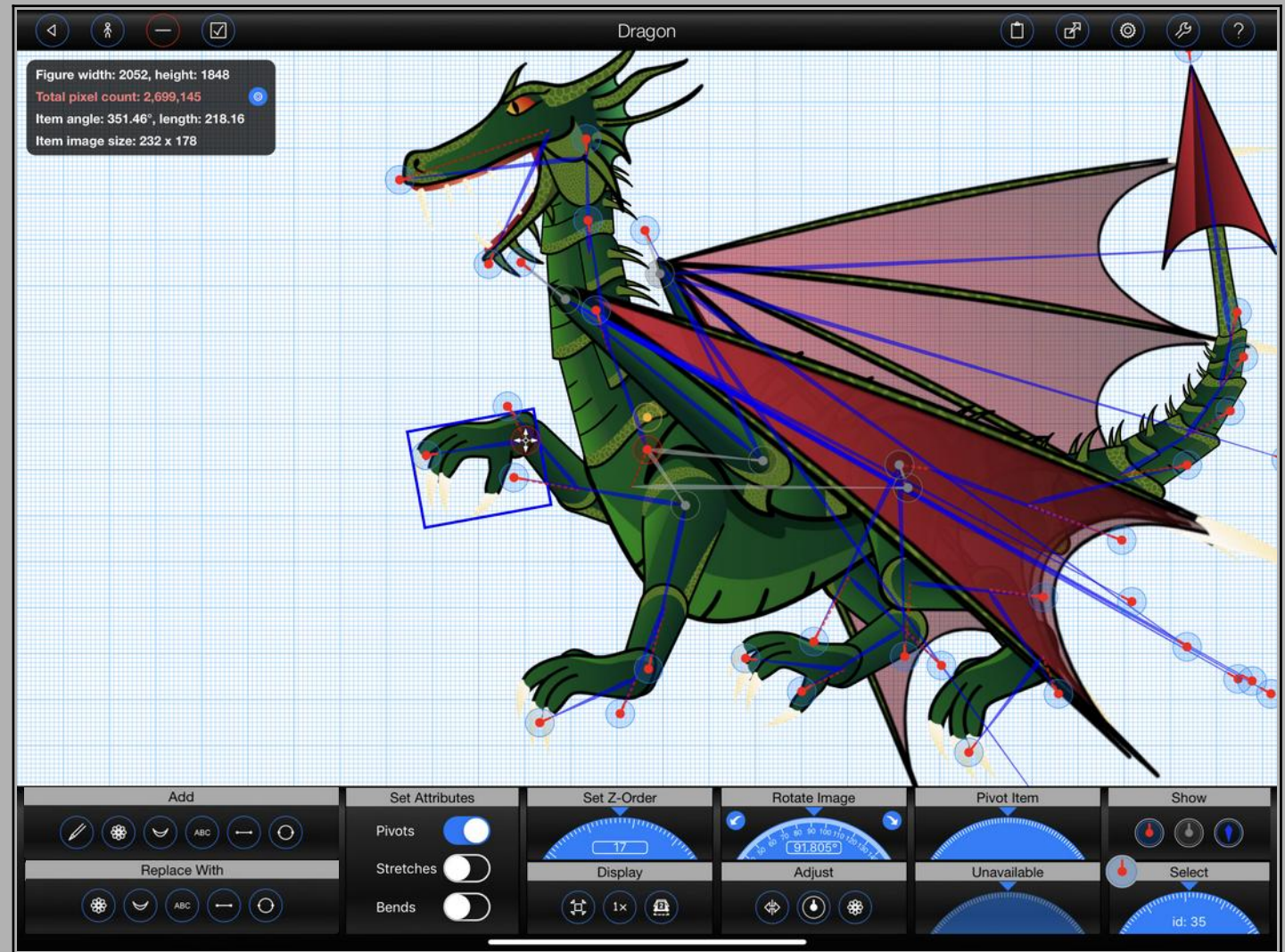
[Optimisation](#)

[Automatically Trimming Images](#)

[Resampling Individual Images](#)

[Optimising a Figure](#)

[The 'Properties' panel](#)



[Drawing](#)

[All About Drawings](#)









[Drawing Tools, Palette and Colour Controls](#)

[Drawing View Options](#)

[Adding Drawings to a Figure](#)

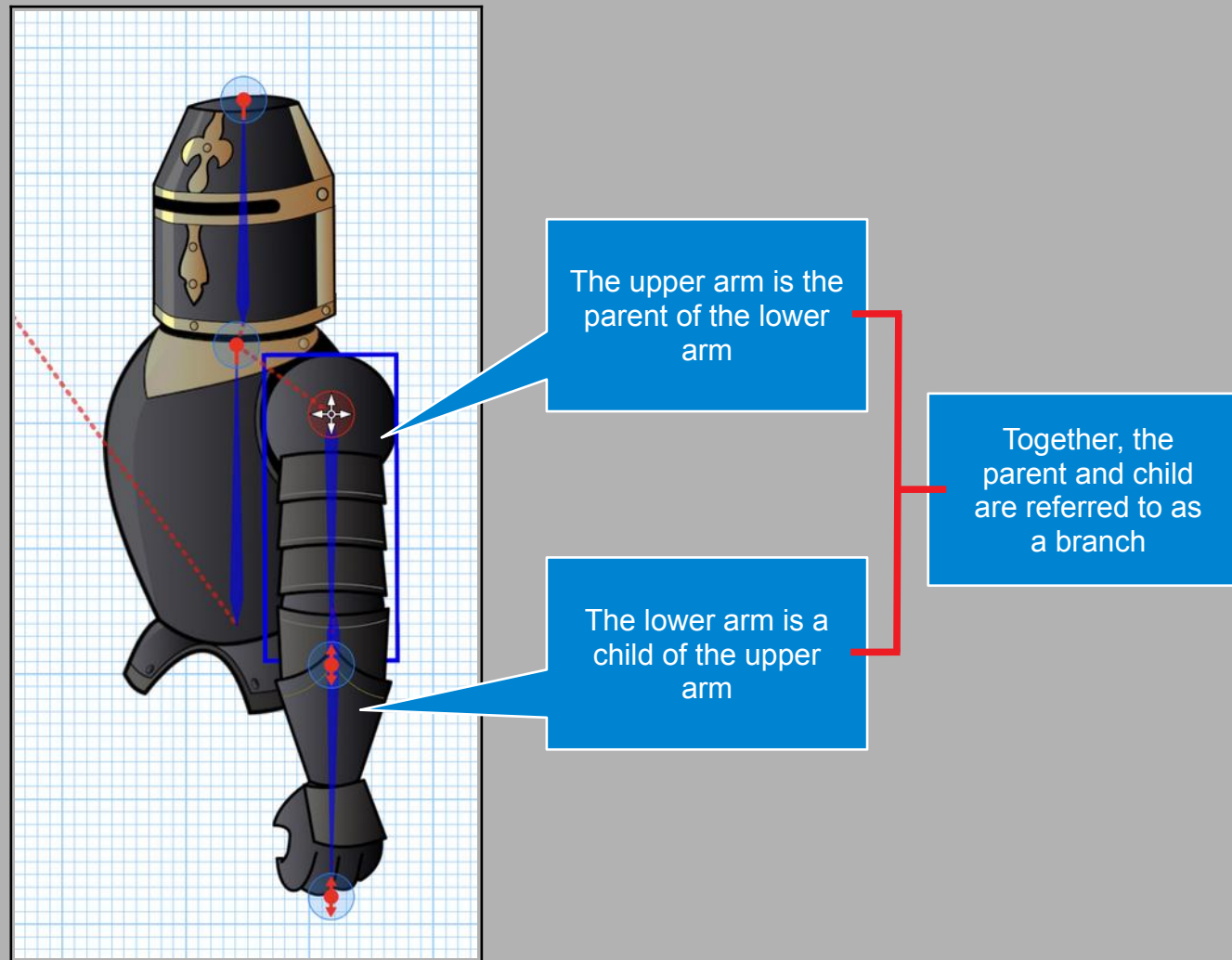
Things to Know First

Here's a few things that I'm going to refer to a **LOT** in this documentation, so please take a moment to digest the following pages (no, don't eat them, that would be rather unhealthy):

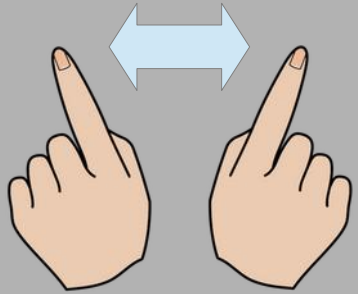
	MOVE mode	This is a figure's anchor point . Whilst animating, you can tap on an anchor point to select a figure or drag the anchor point to move a figure around. It is also the point about which a figure will rotate, scale etc.
	ADJUST mode	When creating a figure, you can tap on an anchor point to toggle between MOVE mode and ADJUST mode. In MOVE mode, dragging the anchor point will move the figure. In ADJUST mode, dragging the anchor point will move it independently of the figure, allowing you to set the point around which the figure will rotate and scale etc.
		This is the figure's hub . It is the point from which you will start adding items to your figure.
	PIVOT mode	This little dude is known as an item handle and can optionally vary in colour. Whilst animating, you can drag handles to select, pivot or stretch items in a figure.
	MOVE mode	When creating a figure, you can tap on item handles to toggle between PIVOT , MOVE and ADJUST mode (where the latter is only available for image items). In PIVOT mode, you can drag a handle to rotate or stretch an item (depending upon the selected item attributes). In MOVE mode, you can drag a handle to rotate, enlarge or shrink an item. In ADJUST mode, dragging the handle will move it independently of the item it belongs to.
	ADJUST mode	
	MOVE mode	Finally, this little fella is known as a pivot point . These will be displayed whenever an image item has been selected (by tapping on the item's handle). Pivot points will not be visible when animating.
	ADJUST mode	When creating a figure, you can tap on pivot points to toggle between MOVE and ADJUST modes. In MOVE mode, dragging a pivot point will move the item (and all items subsequently connected to it). In ADJUST mode, dragging the pivot point will move it independently of the item it belongs to, allowing you to set the point around which the item will rotate i.e. pivot.

A Few More Things to Know First

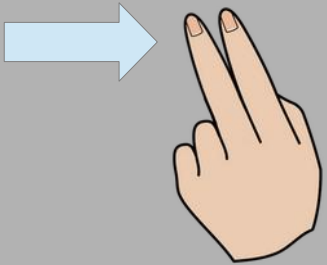
A branch is a term I use for two or more items that have been joined together. Please note that there is a parent/child relationship within a branch as shown in the example below:



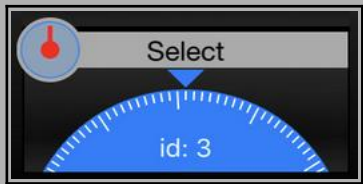
Yet More Things to Know First (This is the last page – I promise!)



You can use two fingers (pinch-to-zoom) to zoom the display in or out.



You can drag with two fingers to move the display around.



You can use the dial (at the bottom right-hand corner of the screen) to select the controls in your figure (i.e. the anchor, hub, handles and pivot points).

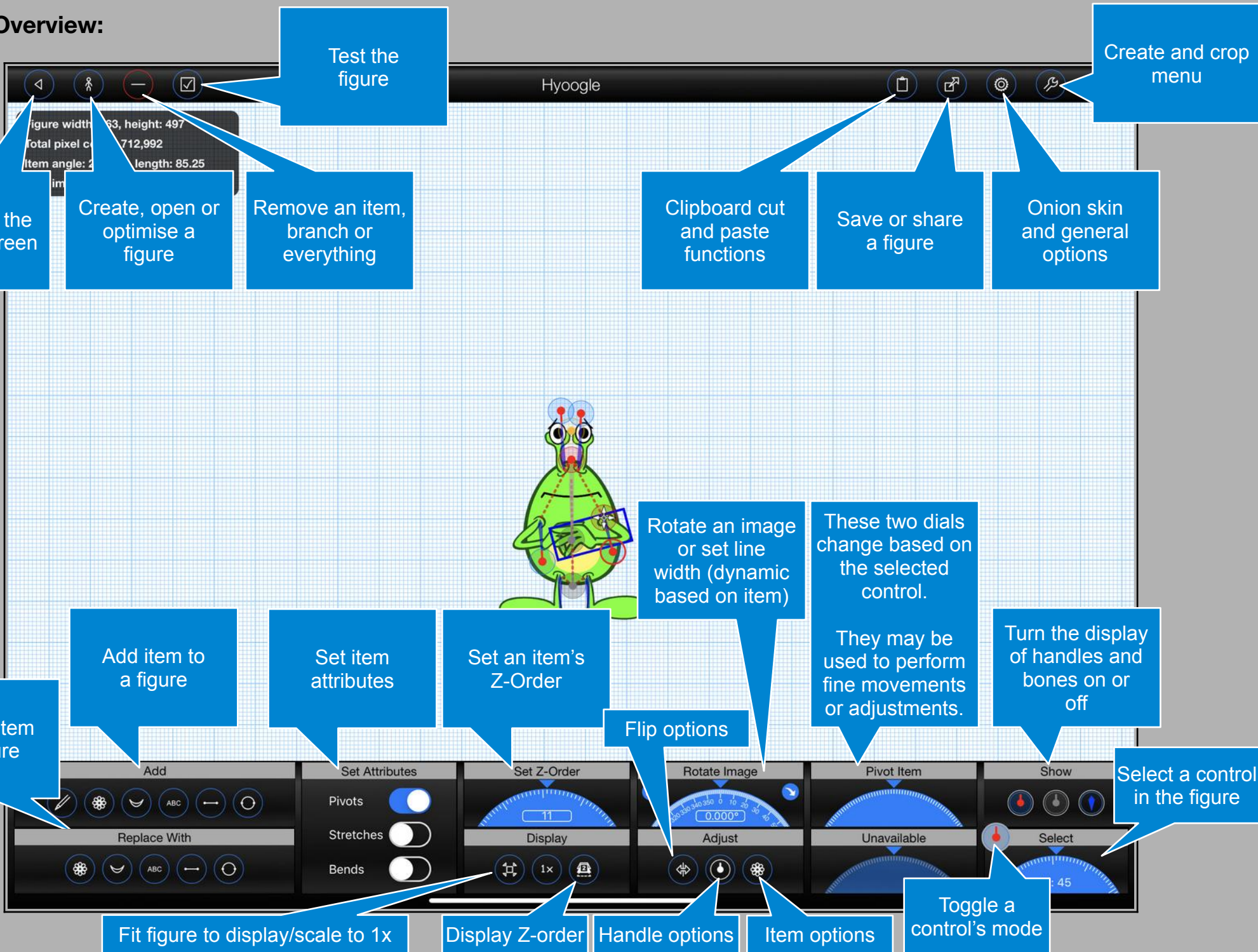
You can tap on the image of the selected control (to the left of the 'Select' heading) to change the control's mode.

This can be very useful if you have overlapping controls!



Cats are important. Well, they're all over the internet, so they must be.

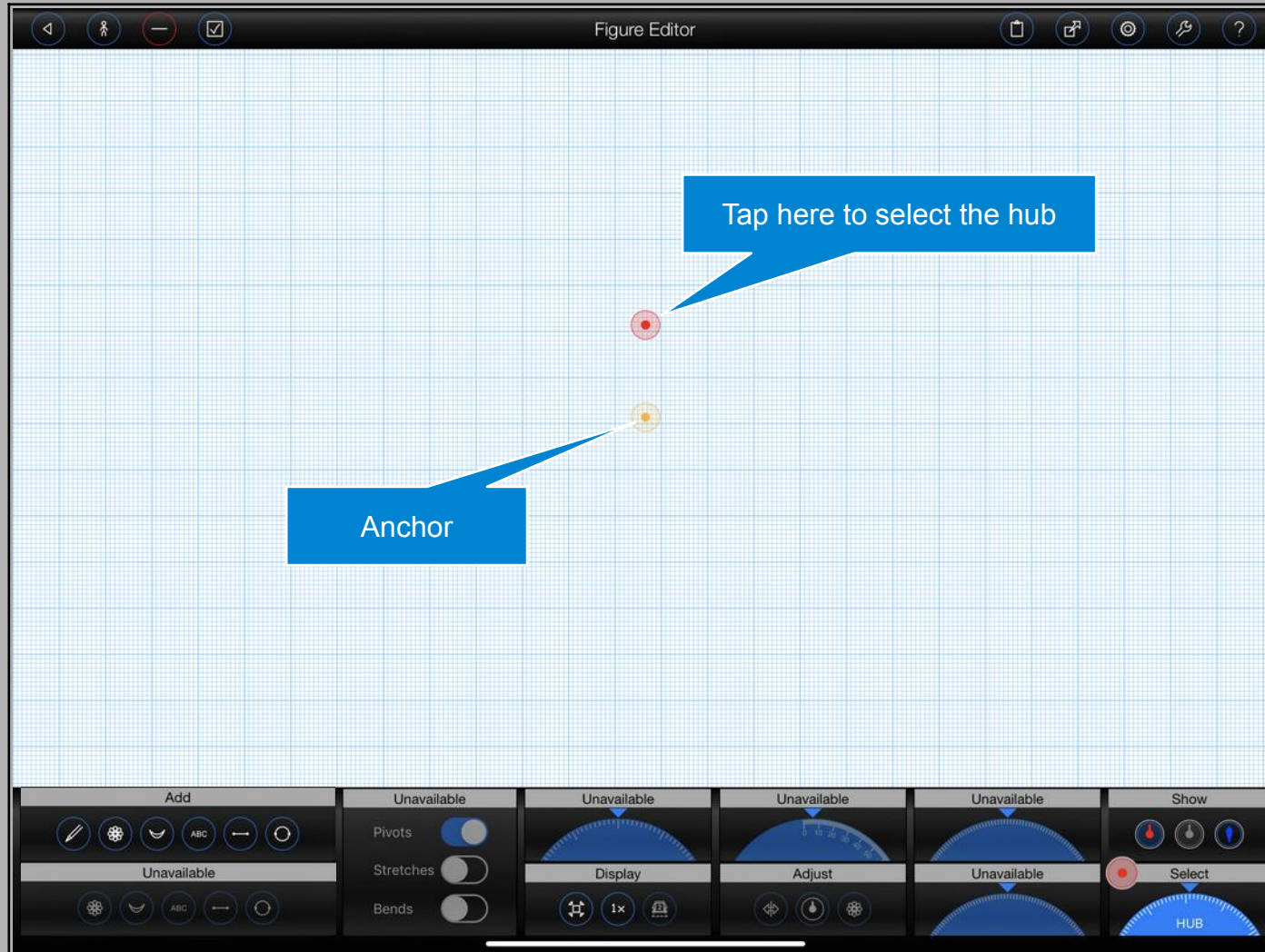
Screen Overview:



The Basics – How to Create a Figure by Example

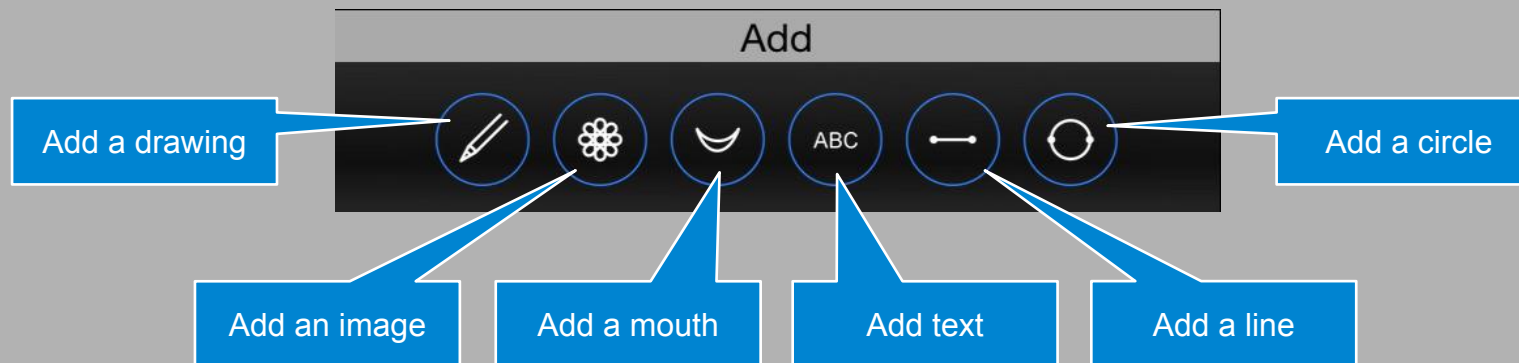
I know that you probably want to get cracking with creating your own figures, so I'll start by working through an example of just how that is done. All of the images used in the creation of this figure are packaged with the App, so please feel free to try it for yourself.

When you first open the Figure Editor, it will look like this:



If the hub is not already selected (flashing), tap on it to select it.

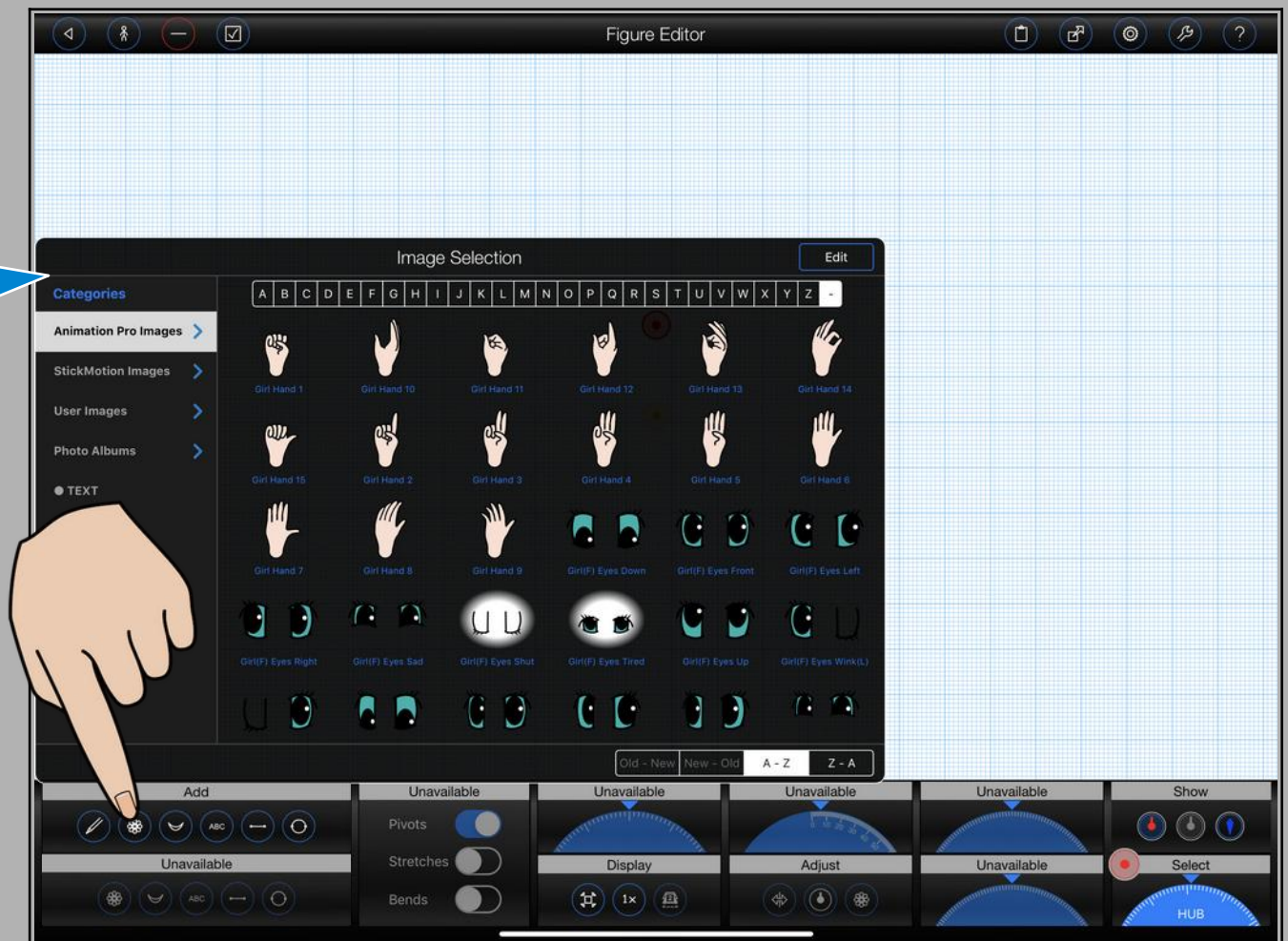
You can add an item to the hub by pressing one of the buttons in the **Add** panel at the bottom of the screen:



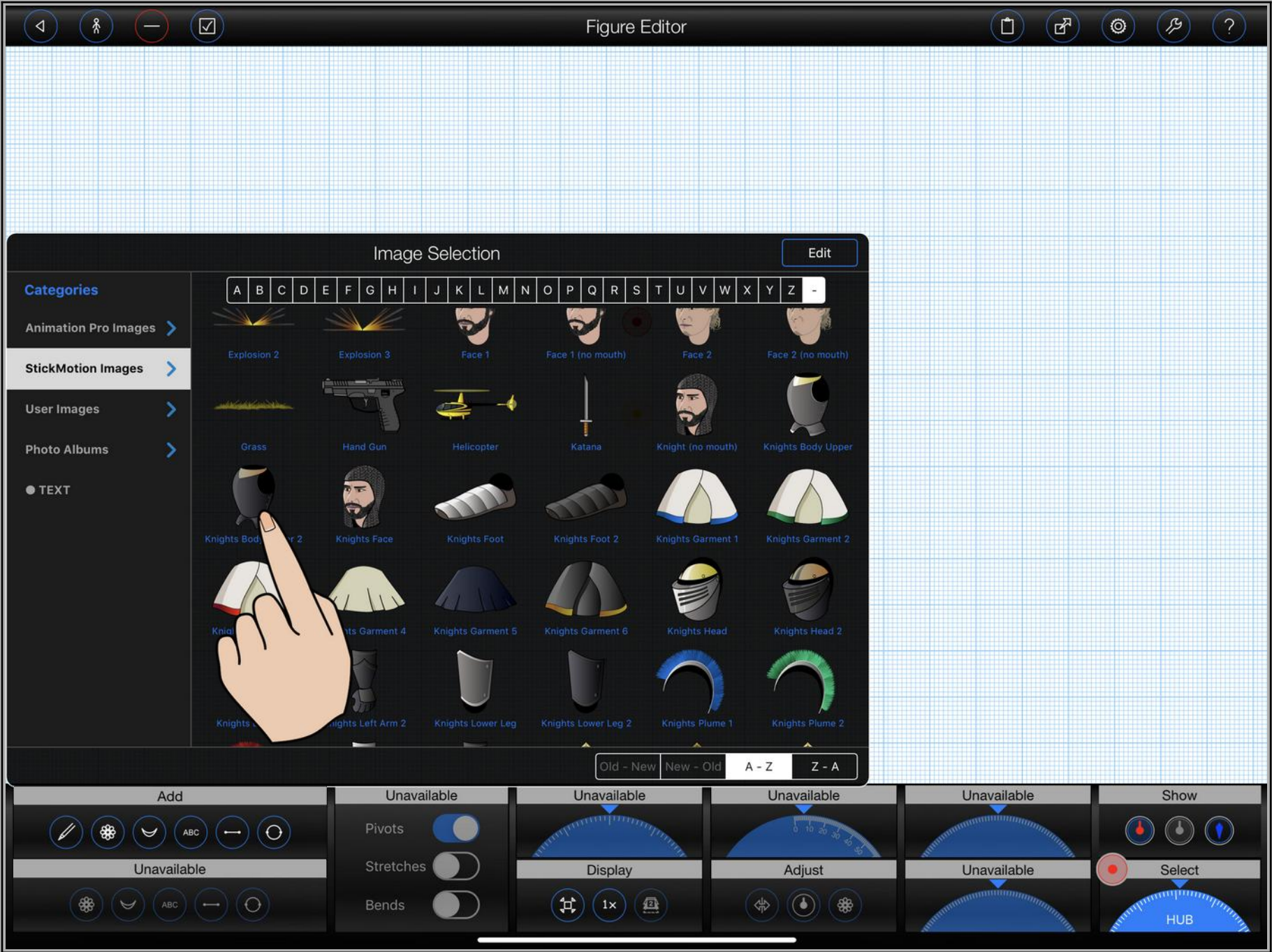
In this example, I will add an image:

Animation Pro will display its File Manager, allowing you to select a suitable image.

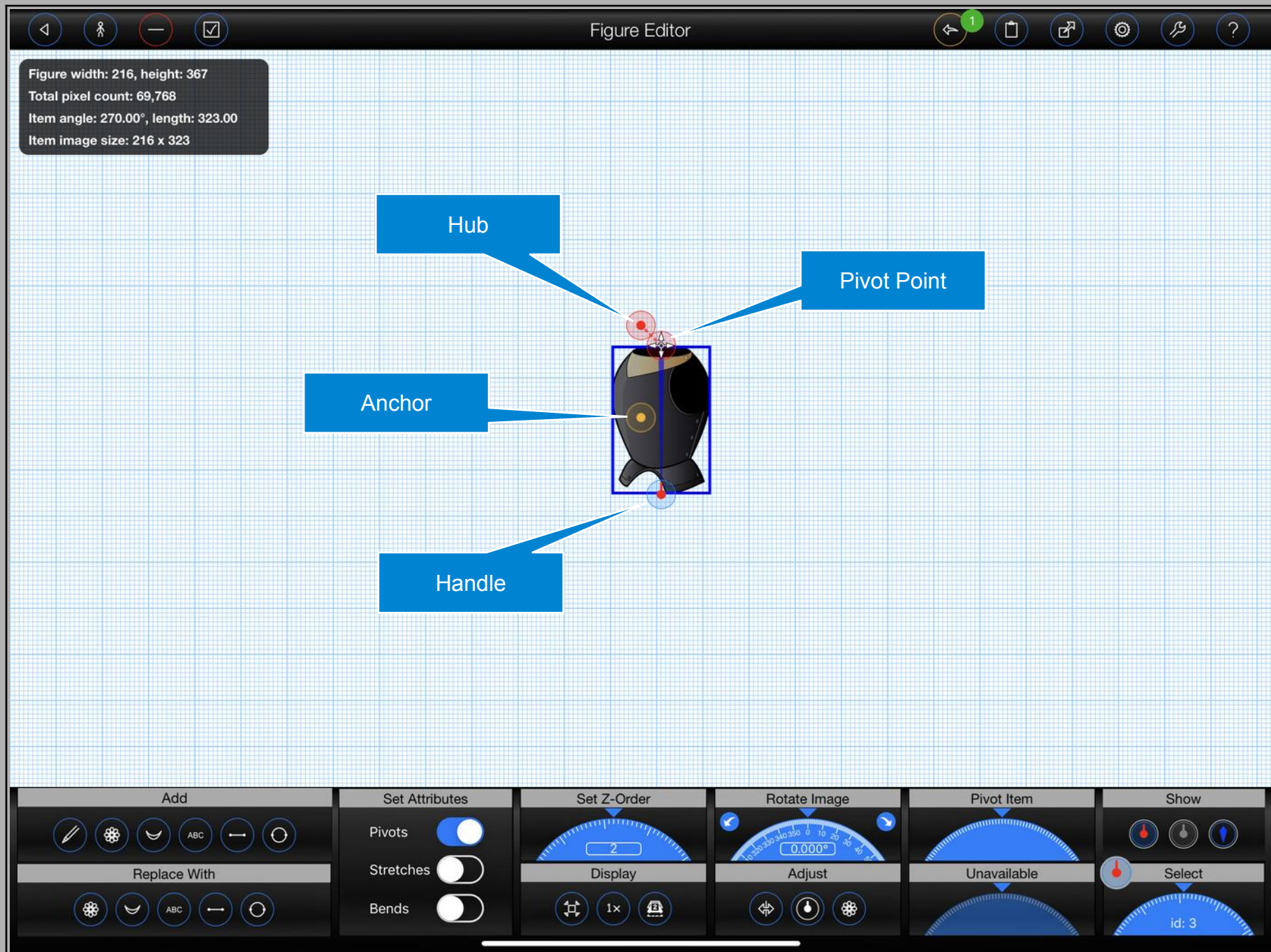
For more information regarding the File Manager, please see the 'File Manager' topic (left).



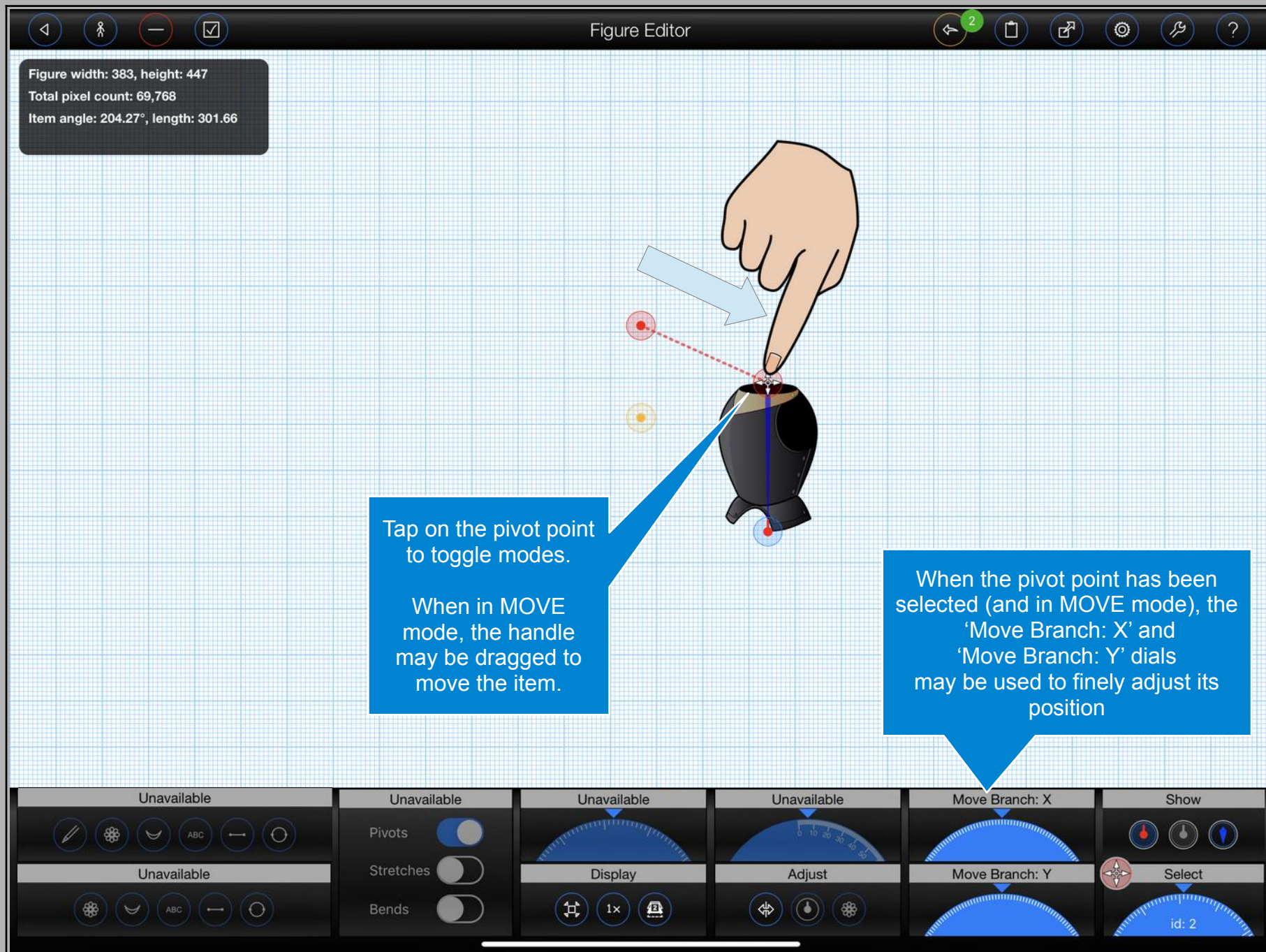
I will select the 'Knights Body Upper 2' image from the 'StickMotion Images' category:



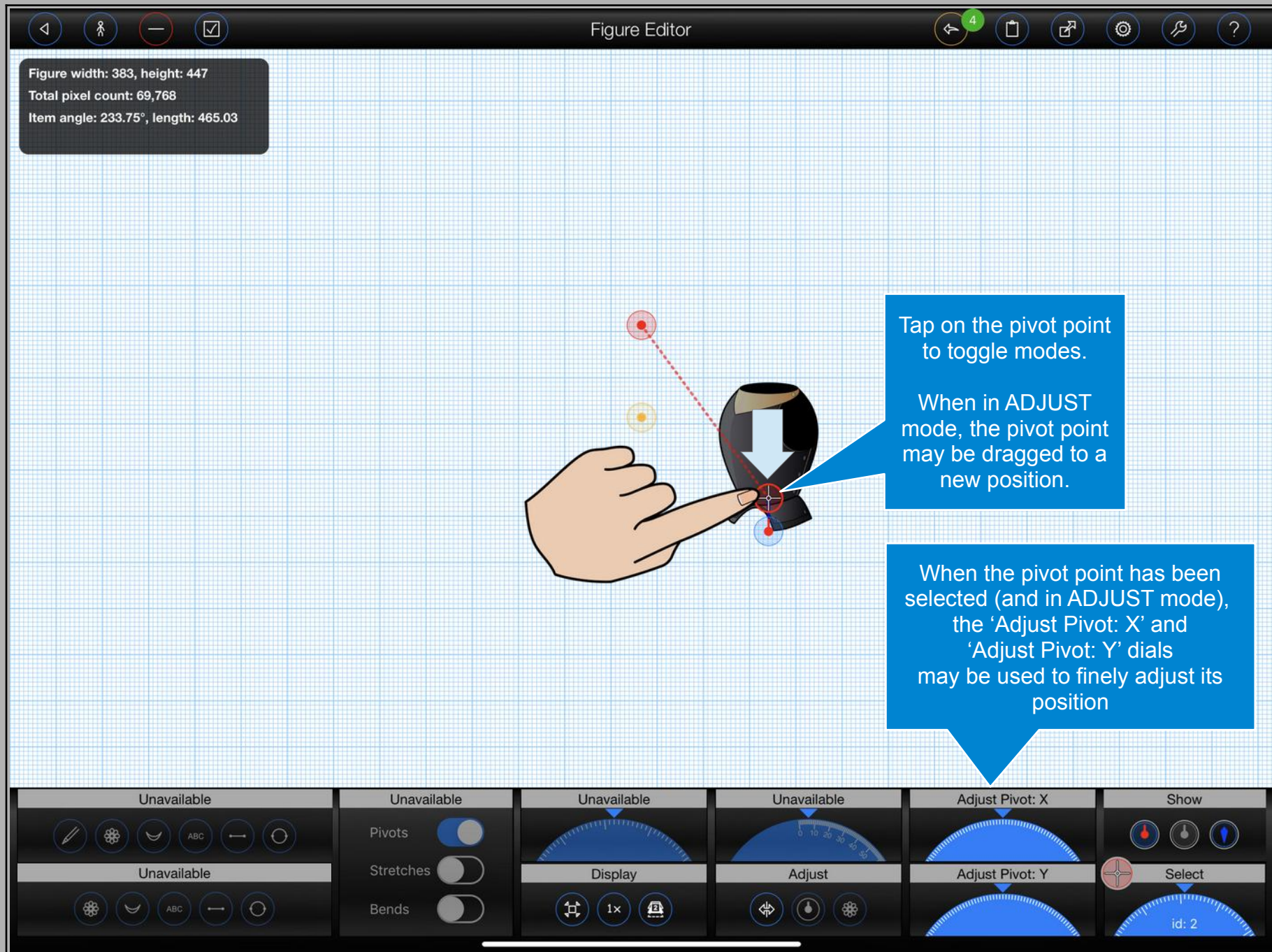
The image of the knight's upper body has now been added to the hub, connected to it by a pivot point:



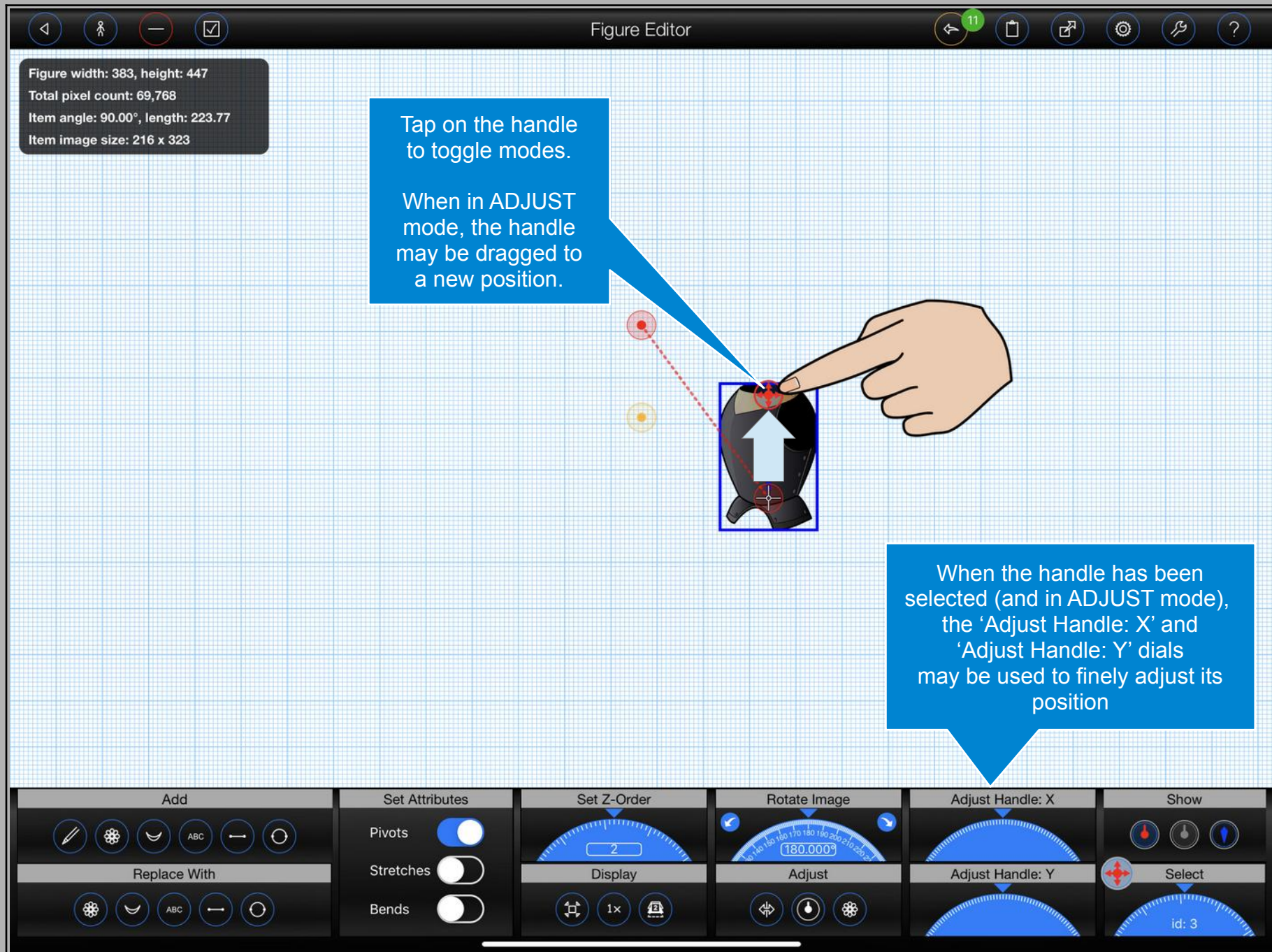
With the pivot point in **MOVE** mode, you can drag the pivot point to move the knight's upper body:



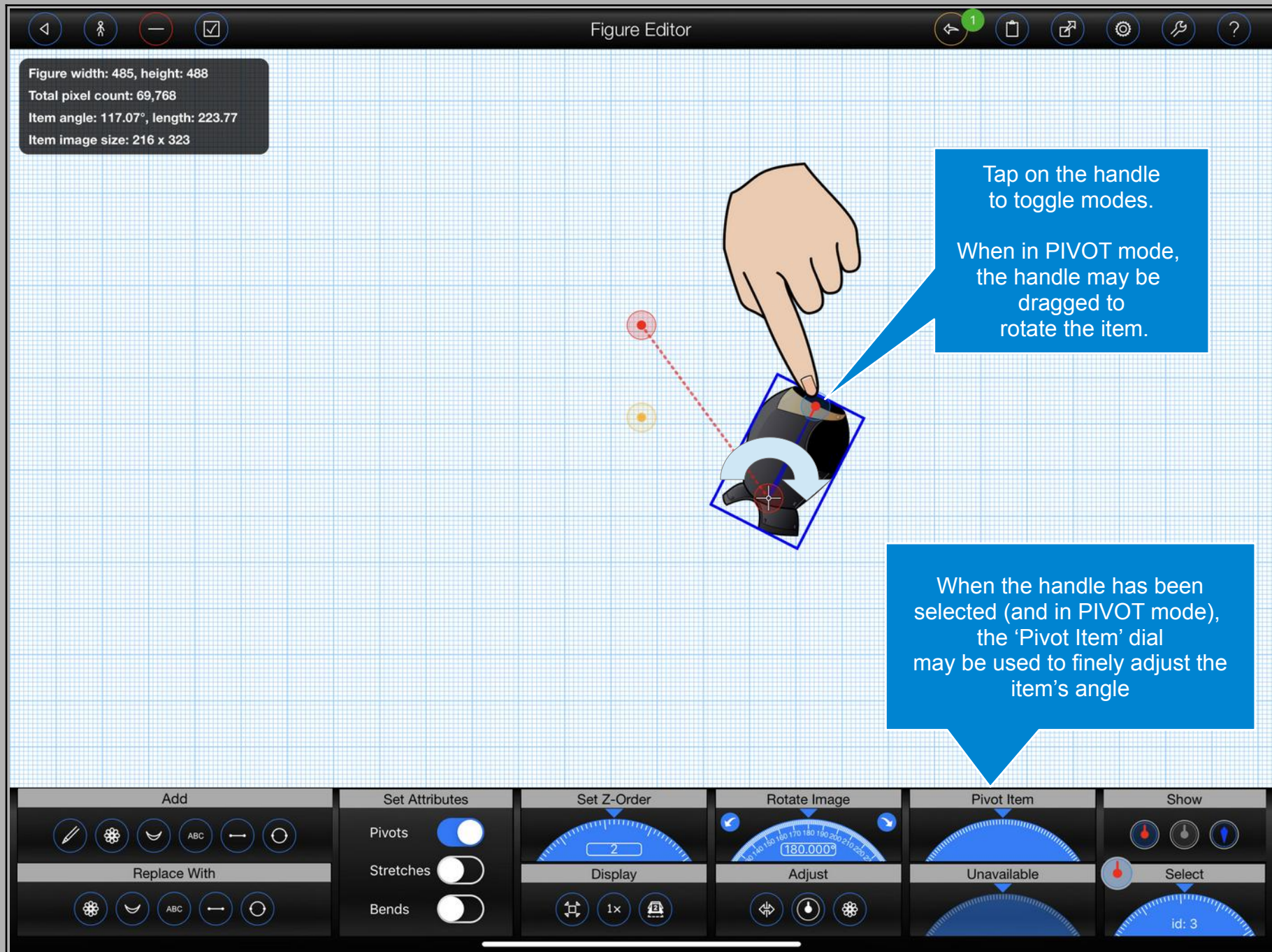
With the pivot point in **ADJUST** mode, a new point of rotation may be set for the knight's upper body:



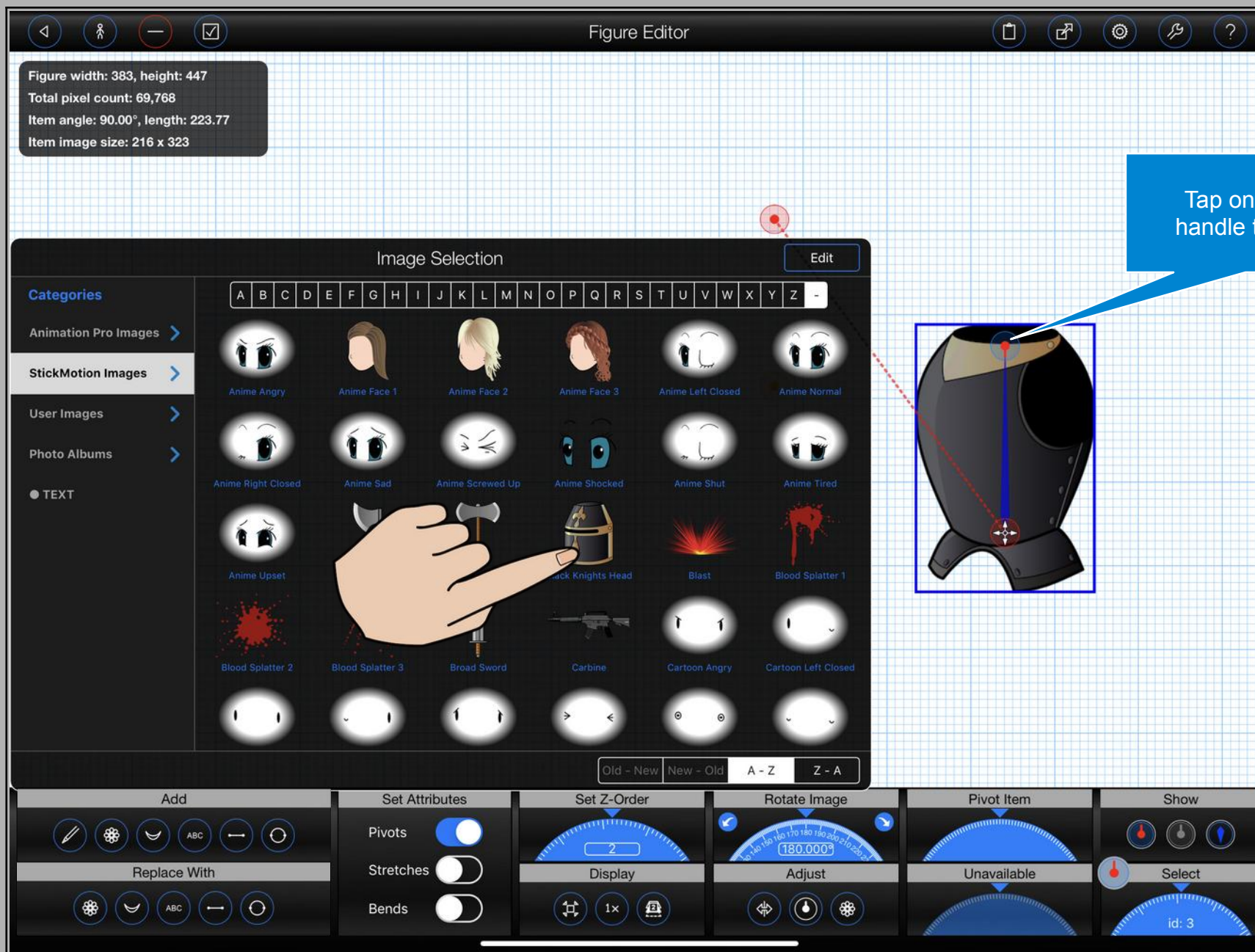
With the item's handle in **ADJUST** mode, the handle may be moved to the top of the image:



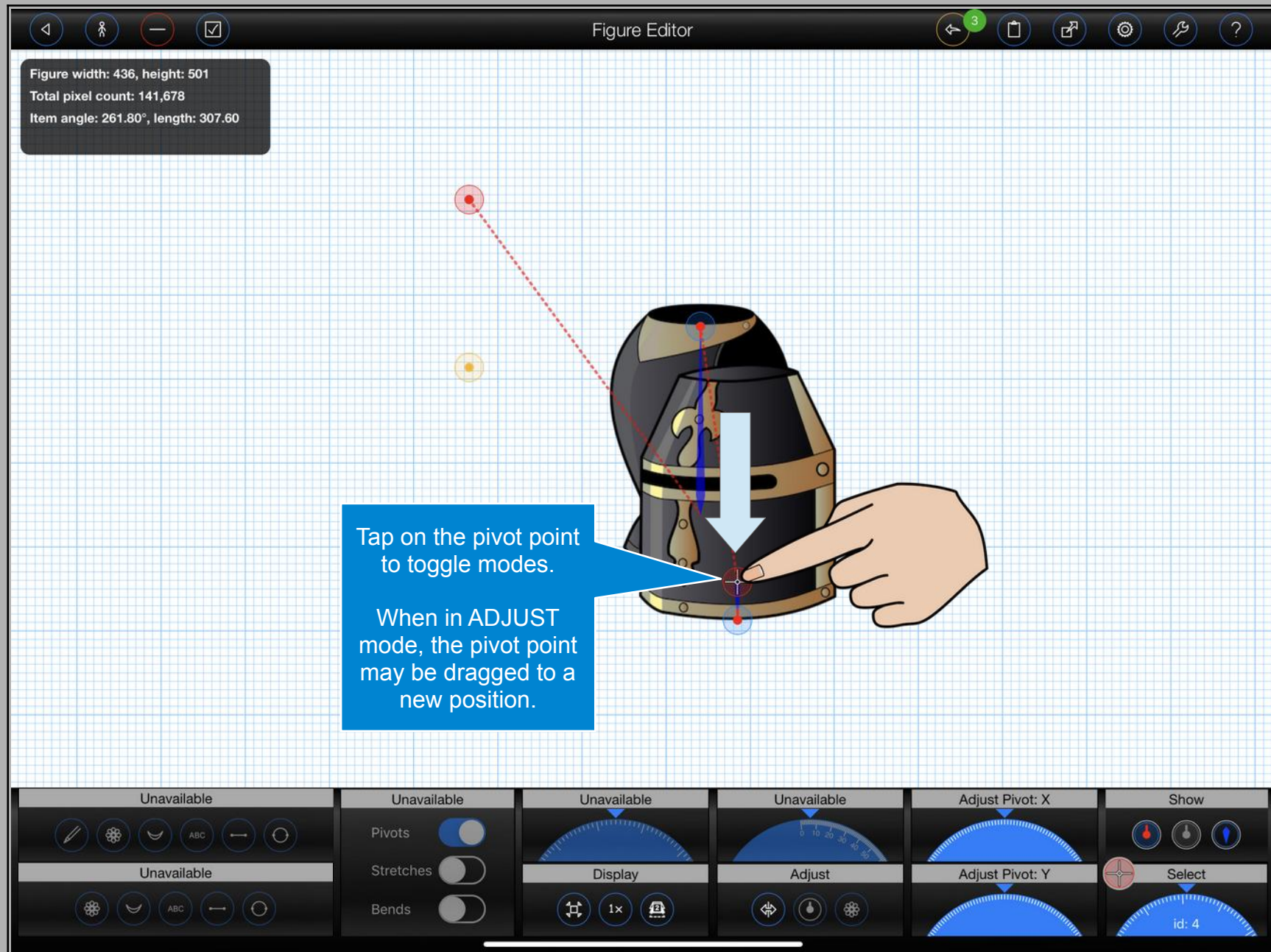
Now, if I put the handle back into **PIVOT** mode, I can see that the knight's upper body pivots correctly about its waist:



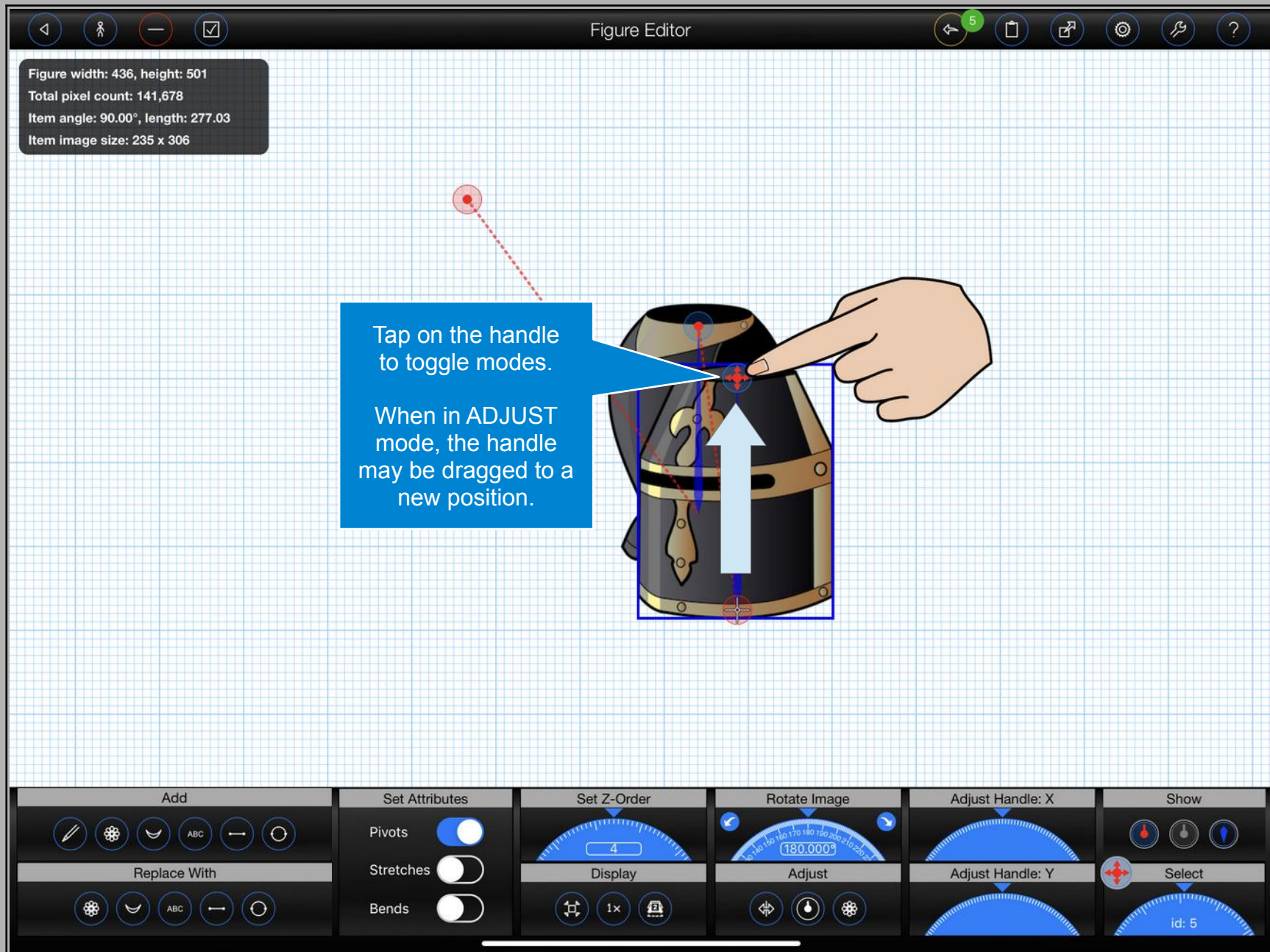
So I'll now proceed to add the knight's head. The head needs to be attached to the body, so I need to make sure that the knight's body is selected (if it is not already selected i.e. its handle should be flashing) by tapping on it's handle. After that, I can press the 'Image' button again (in the 'Add' panel) to open the File Manager and select the knight's head:



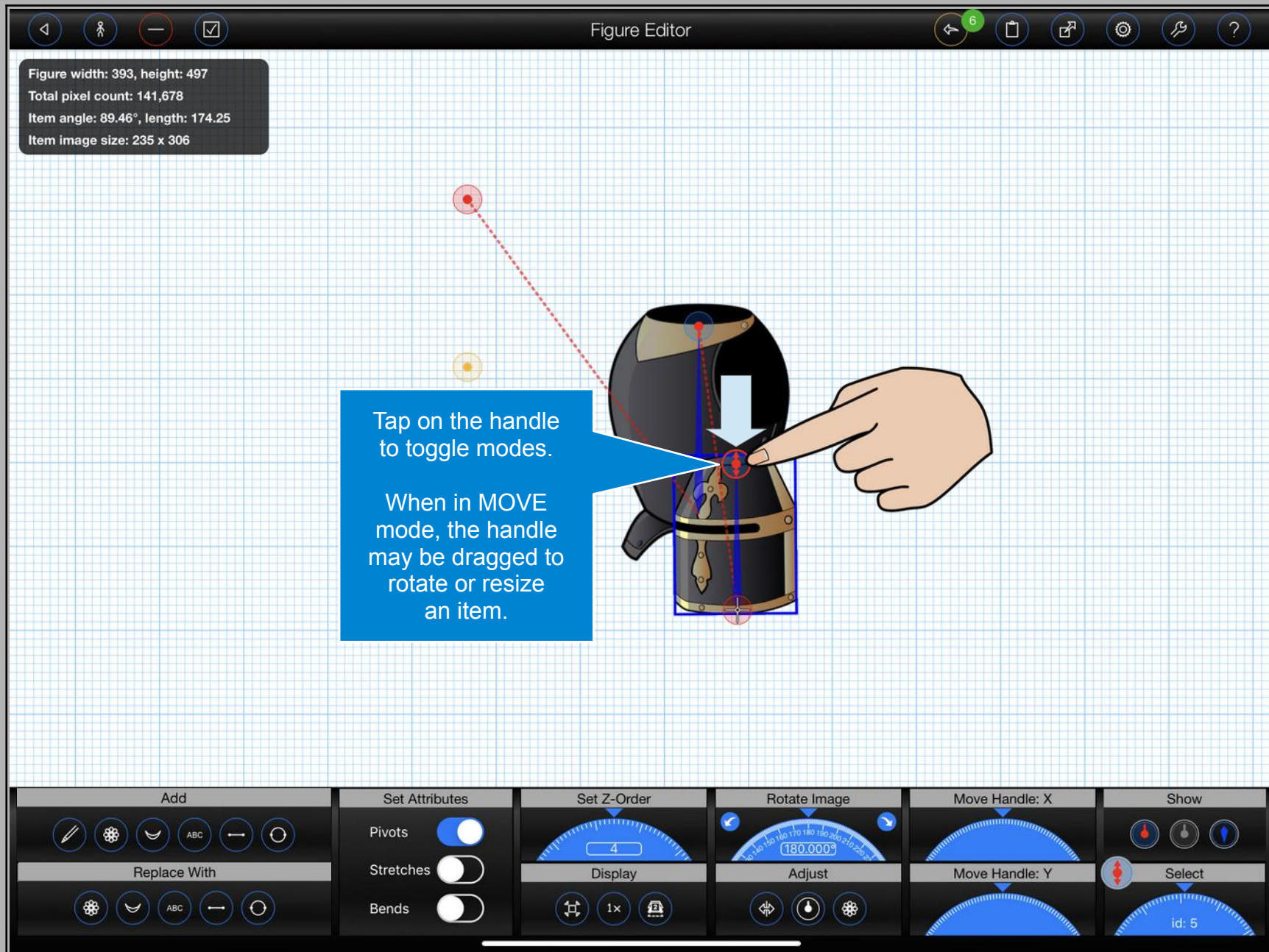
As with the body, it will be necessary to move the handle and pivot point such that the head rotates correctly at its neck. So I'll tap on the head's pivot point until it is in **ADJUST** mode and then drag it to the bottom of the head:



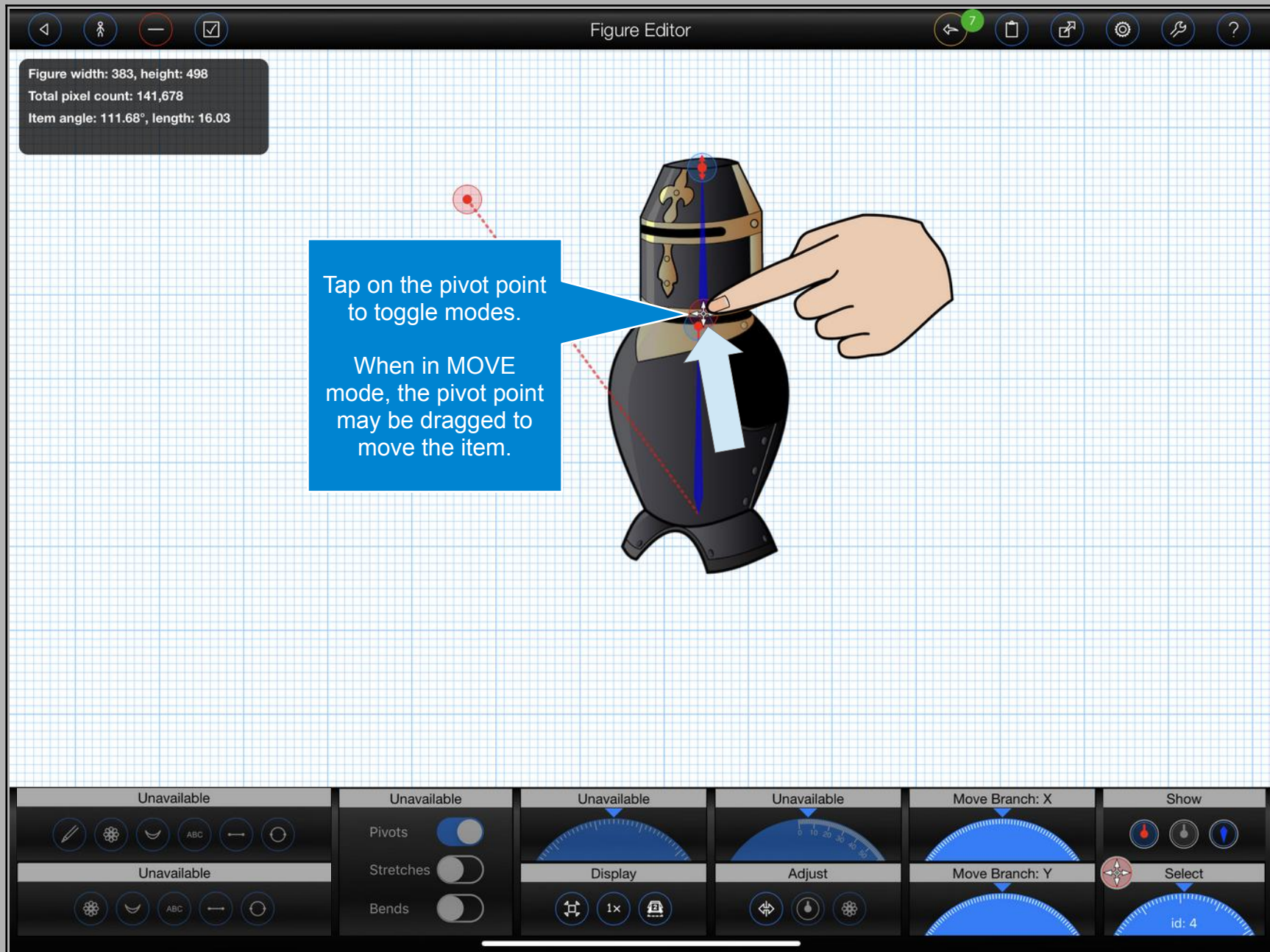
Similarly, I'll tap on head's handle until it is in **ADJUST** mode and then drag it to the top of the head:



Now someone must have told the knight that he was very brave as his head is way too big. So I'll tap on the head's handle until it is in **MOVE** mode and then drag it to make the head smaller:



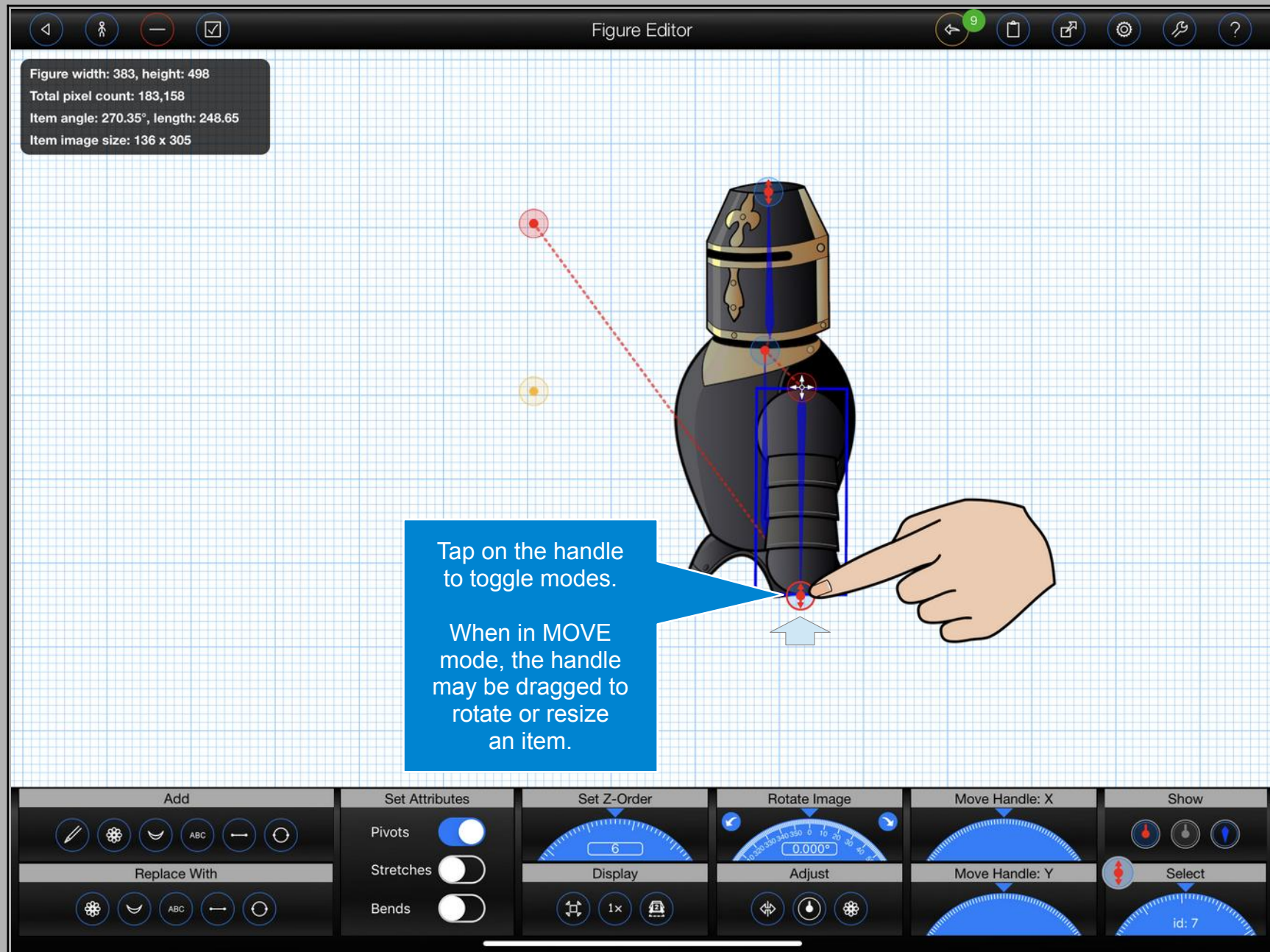
Finally, the head really belongs at the top of the body. So I'll tap on the head's pivot point until it is in **MOVE** mode and then drag the head to the top:



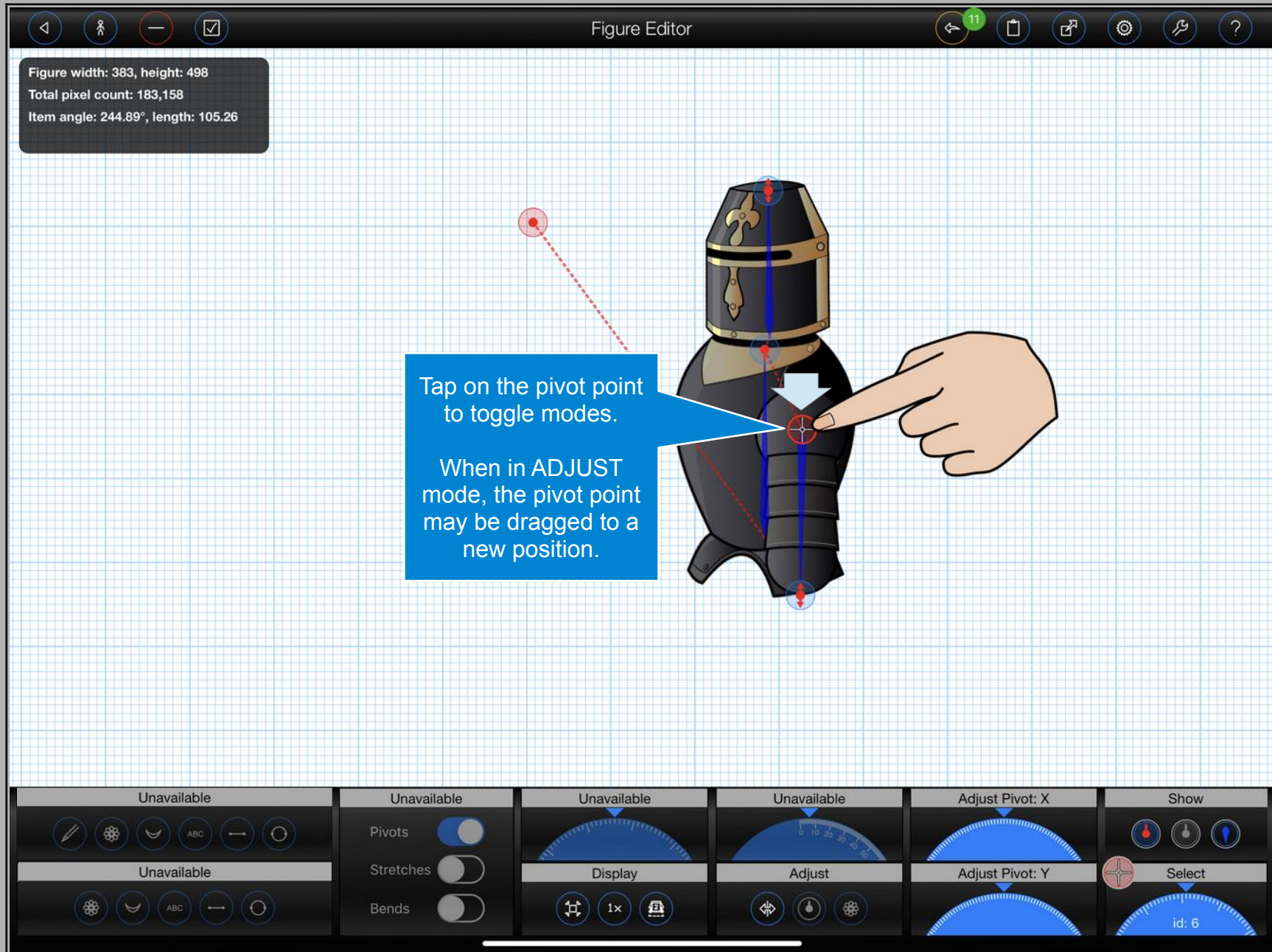
Let's now add the figure's left arm, starting with the upper arm which needs to be connected to the figure's body. So I'll need to make sure that the knight's body is selected (if it is not already selected i.e. its handle should be flashing) by tapping on it's handle. After that, I can press the 'Image' button again (in the 'Add' panel) to open the File Manager and select the knight's upper arm:



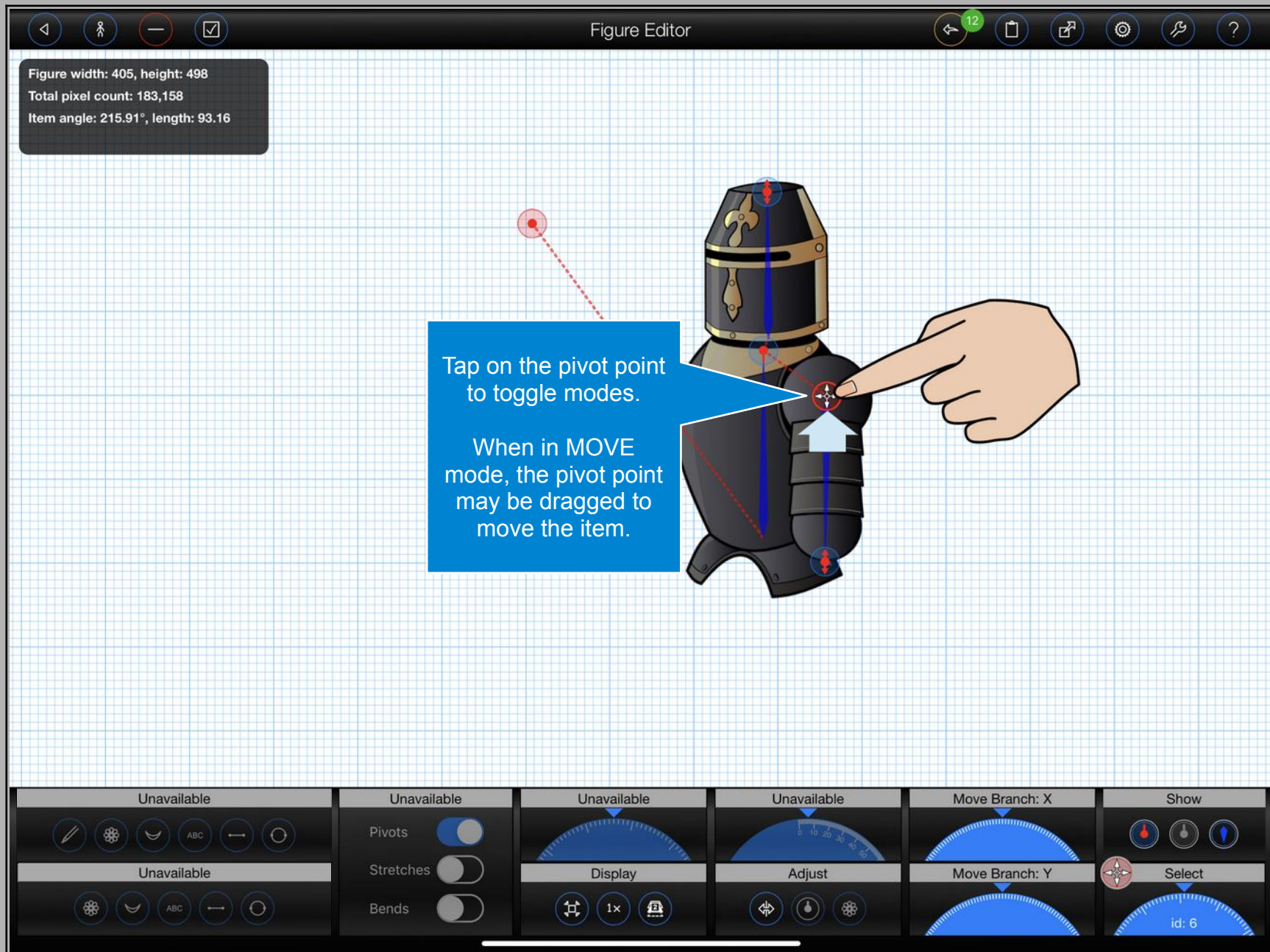
The knight's upper arm is a little too large. So I'll tap on the upper arm's handle until it is in **MOVE** mode and then drag it upward to reduce the size of the upper arm:



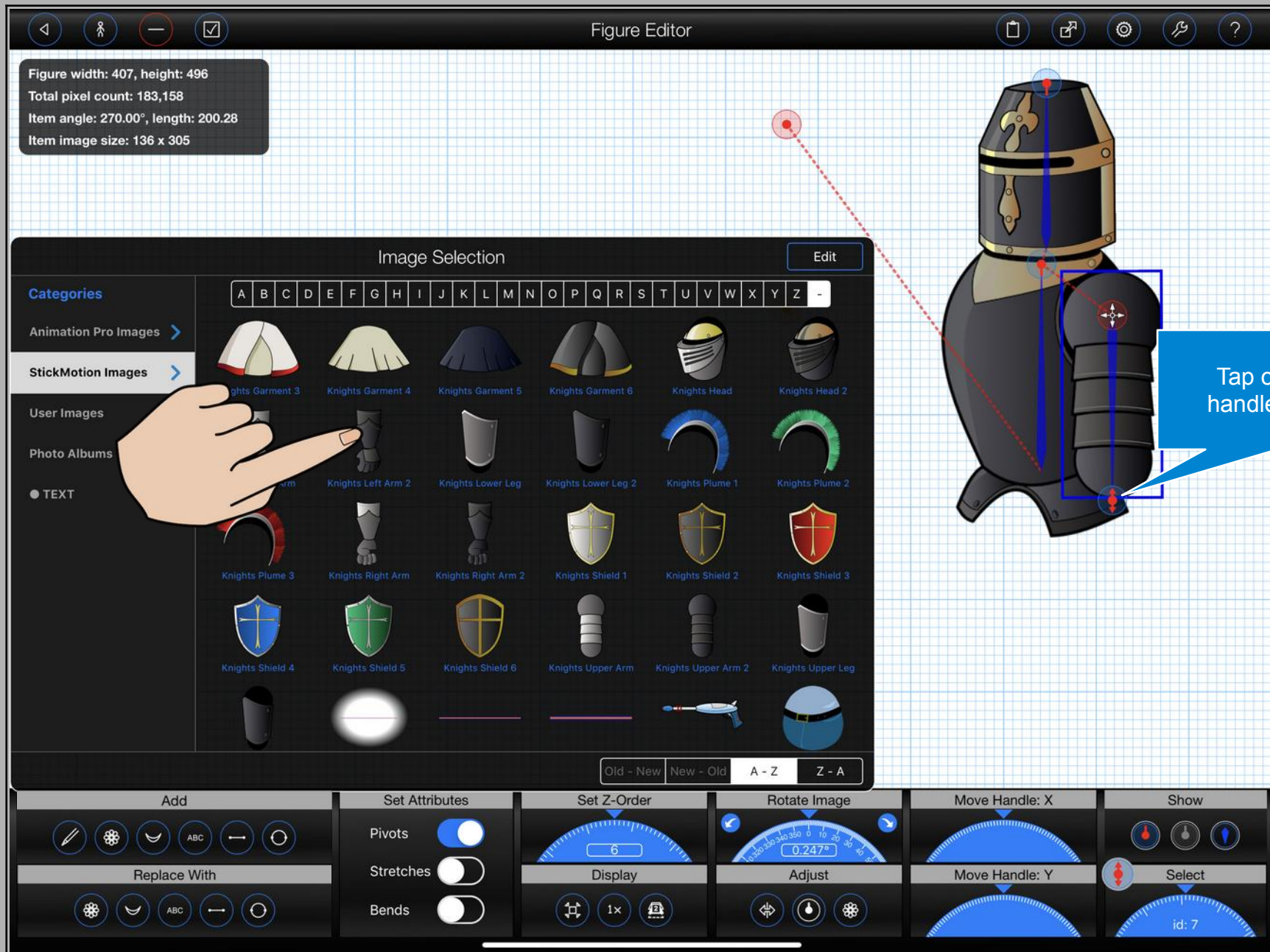
Next, I'll tap on the upper arm's pivot point until it is in **ADJUST** mode and then drag it downwards a little to set a better point of rotation:



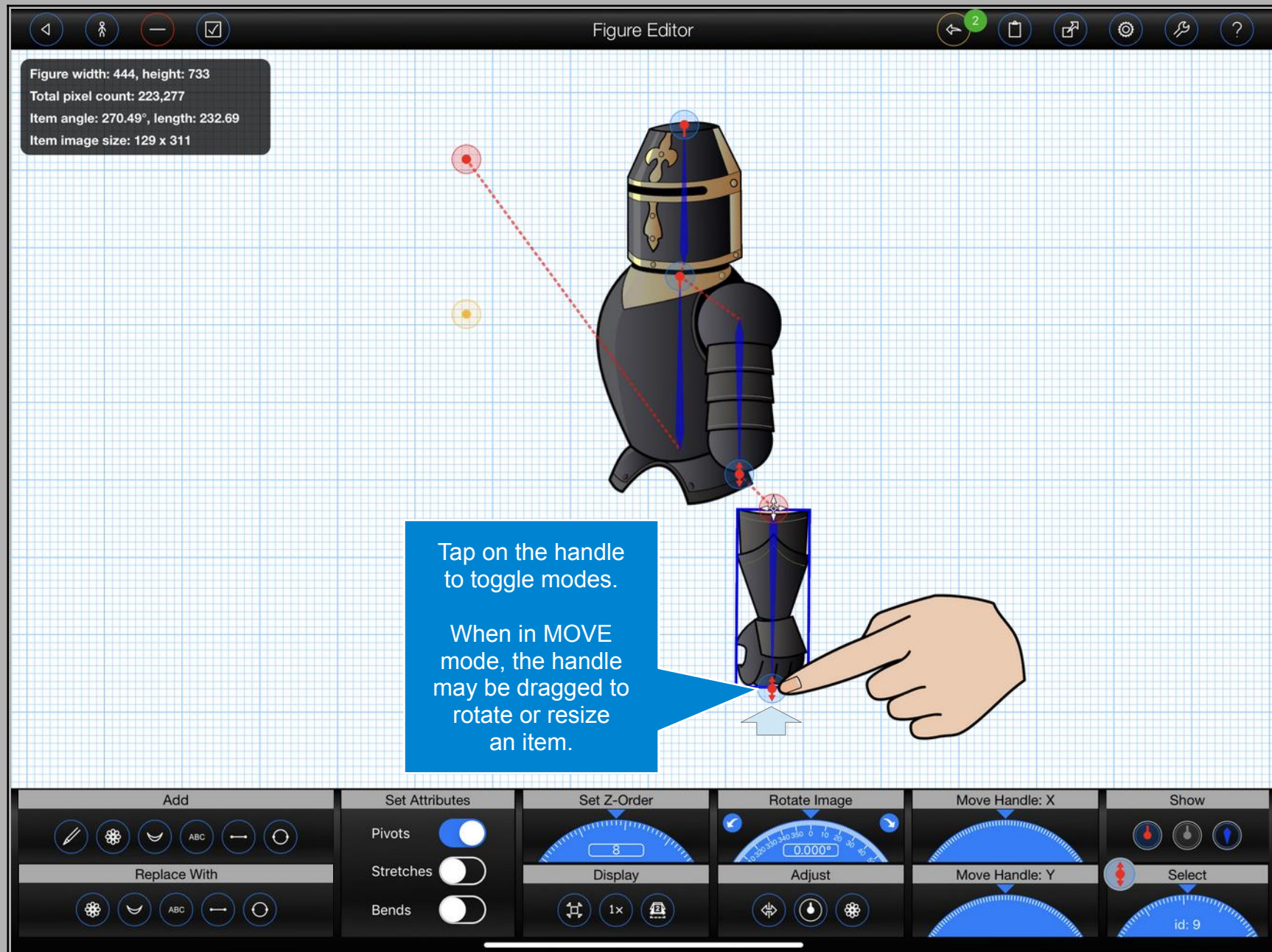
Finally, I need to move the upper arm into the correct position. So I'll tap on the upper arm's pivot point until it is in **MOVE** mode and then drag the upper arm up a little:



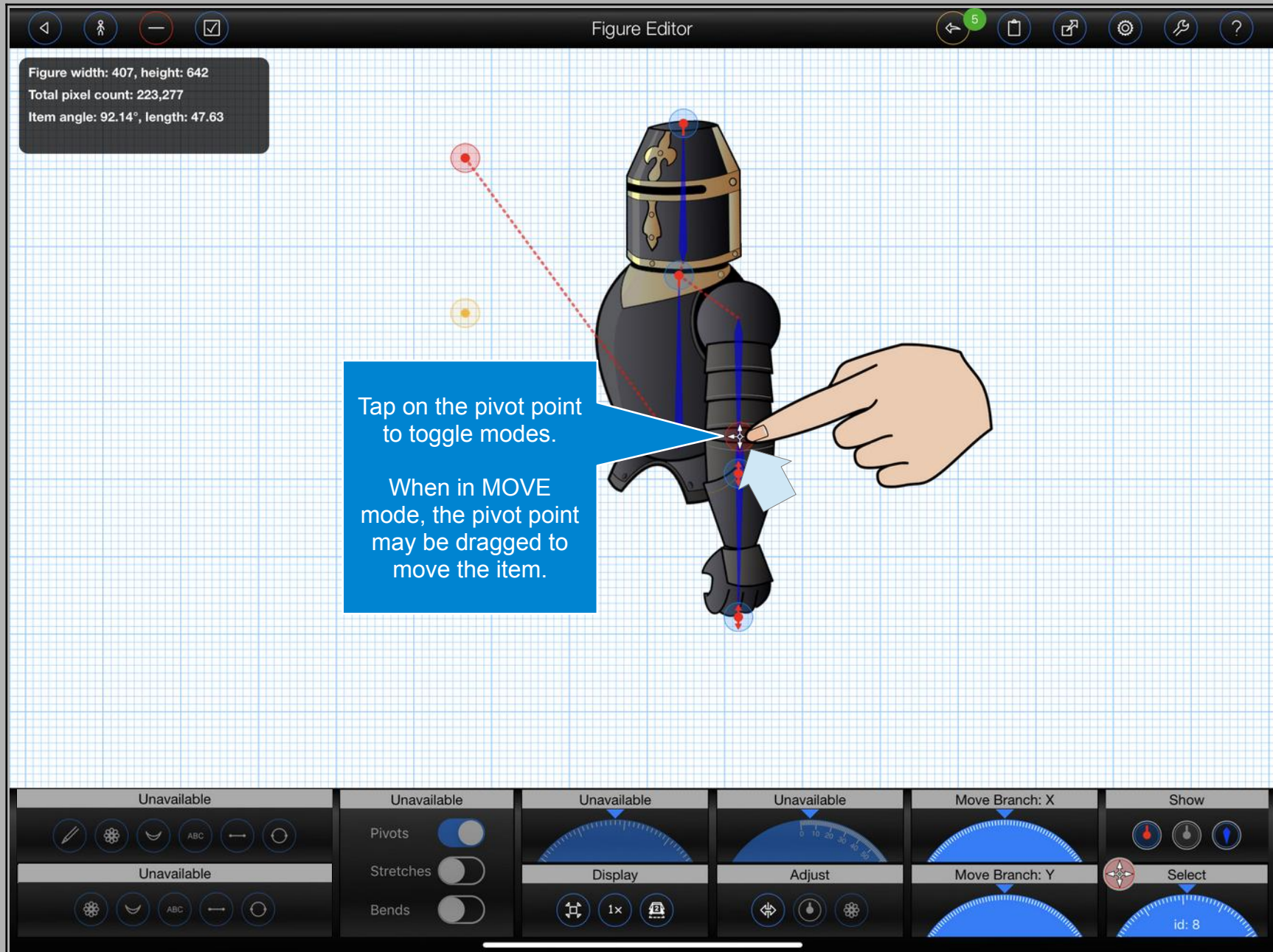
Let's now add the figure's lower left arm, which needs to be connected to the figure's upper left arm. So I'll need to make sure that the knight's upper left arm is selected (if it is not already selected i.e. its handle should be flashing) by tapping on it's handle. After that, I can press the 'Image' button again (in the 'Add' panel) to open the File Manager and select the knight's lower arm:



The knight's lower arm is a little too large. So I'll tap on the lower arm's handle until it is in **MOVE** mode and then drag it upward to reduce the size of the upper arm:



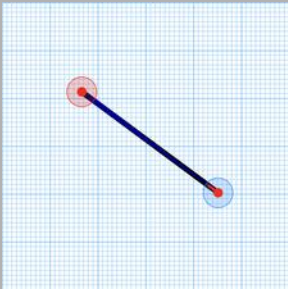
The point of rotation (pivot point position) for the lower arm is already pretty good, so I'll just move the lower arm into the correct position. To do that, I'll tap on the lower arm's pivot point until it is in **MOVE** mode and then drag the lower arm to meet the elbow of the upper arm:



And that's it – the basic steps required to construct a figure! But please read on as there's much more functionality to explore...

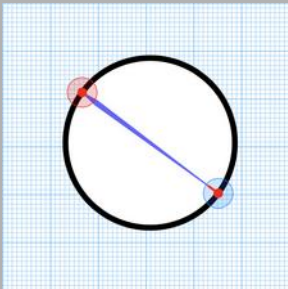
Adding Items to a Figure

The following items may be used to construct a figure:



Lines

Lines may be of any length with configurable widths ranging from 0 (not visible) to 100 pixels. They may be made to pivot, stretch or bend whilst animating. The colour and opacity of lines are also configurable in the Figure Editor.



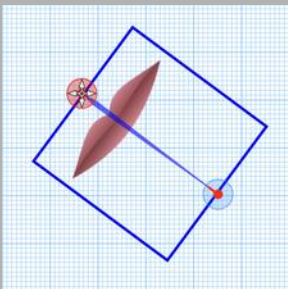
Circles

Circles may be of any radius with configurable outer line widths ranging from 0 (not visible) to 100 pixels. They may be made to pivot or stretch whilst animating. The line colour, fill colour and opacity of circles are also configurable in the Figure Editor.



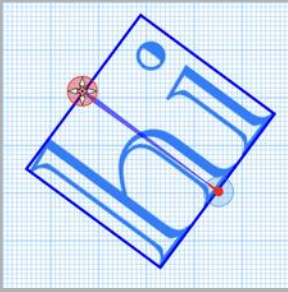
Images/Drawings

Any image native to iOS may be used in a figure. For the best results, PNG images should be used (to preserve transparency). Images may be made to pivot, stretch or bend whilst animating. They may also be scaled, rotated, flipped and tinted in the Figure Editor. Their opacity is also configurable. Drawings are essentially blank images that are ready to draw upon.



Mouths

Mouths are a collection of 12 'mouth shapes' that can automatically lip-synch with audio. A number of mouths are packaged with Animation Pro. Alternatively, they may be created using the integrated Animation Pro 'Mouth Creator'. Mouths may be manipulated in the same way as images (above).

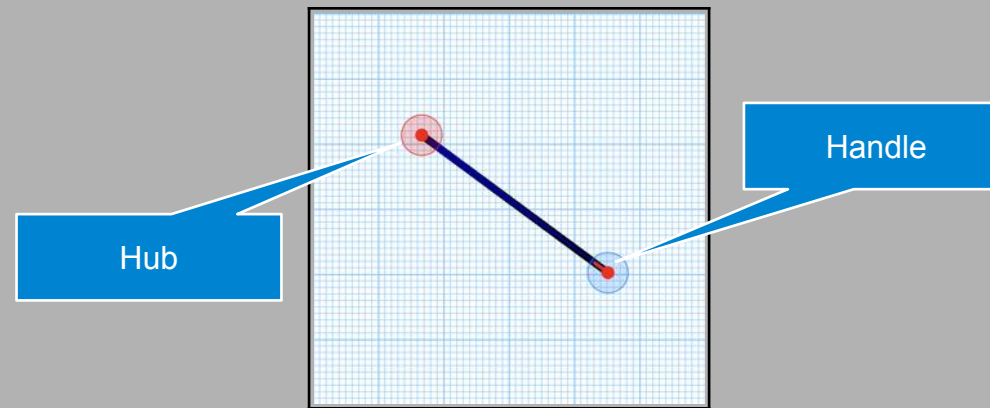


Text

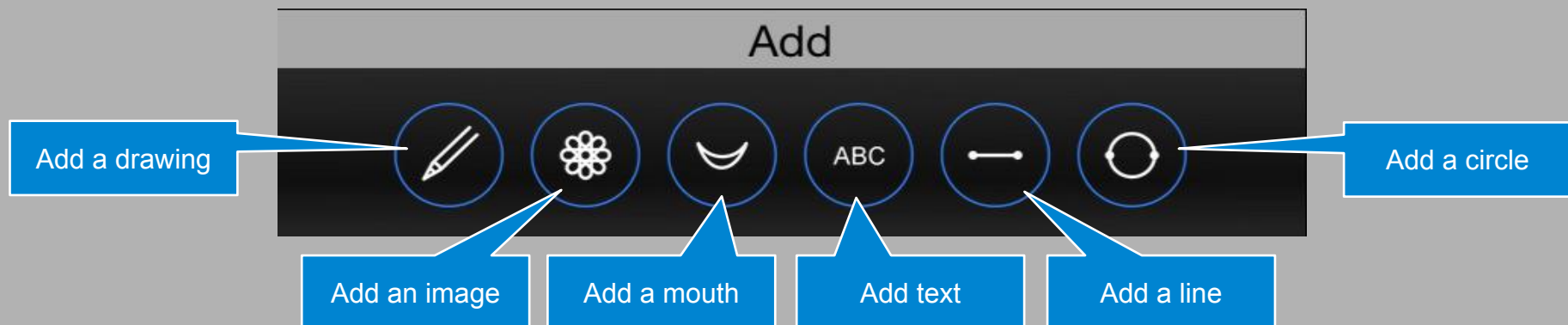
Text may be used within figures. The process of adding text converts it to an image such that it may be manipulated in the same way as images (see above).

To add an item to a figure:

1. Select either the hub or the item that you wish to add an item to (by tapping on the hub or the item's handle):



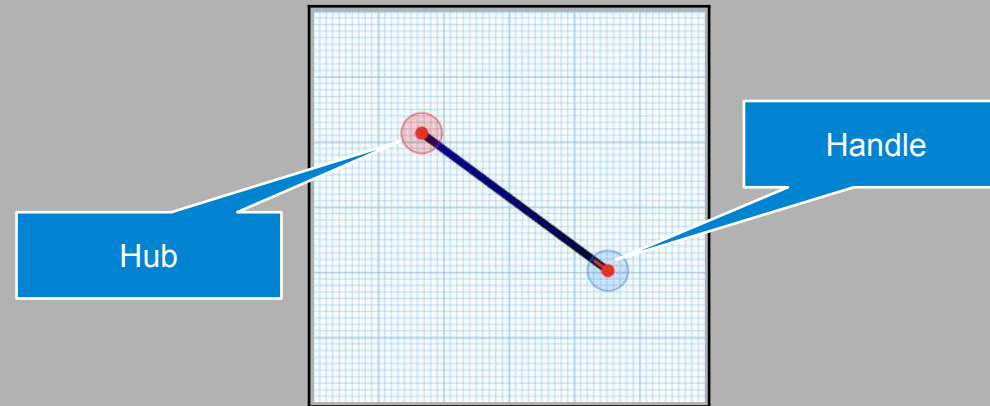
2. Press one of the buttons in the 'Add' panel:



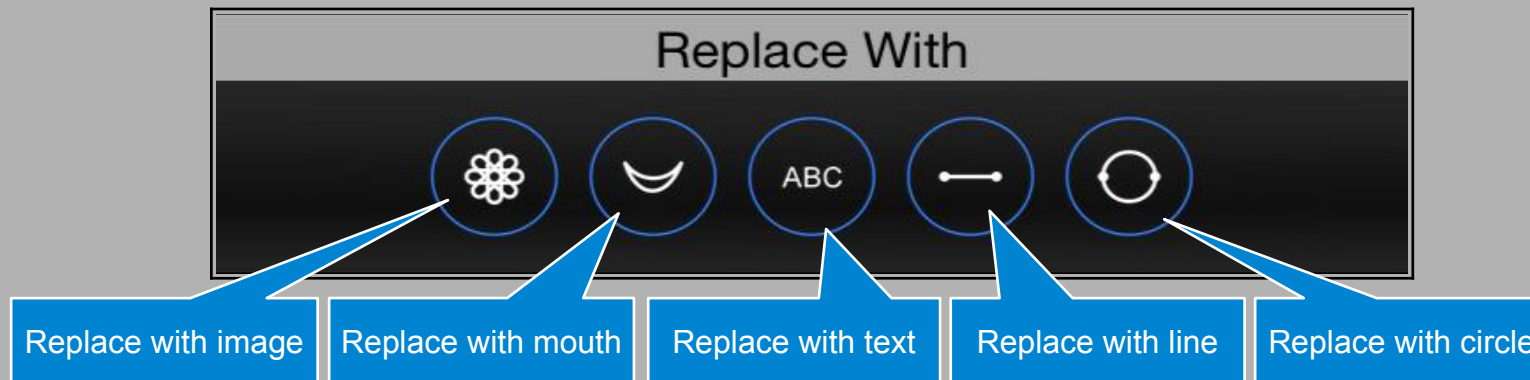
Replacing Items in a Figure

To replace an item to a figure:

1. Select the item that you wish replace (by tapping on its handle):



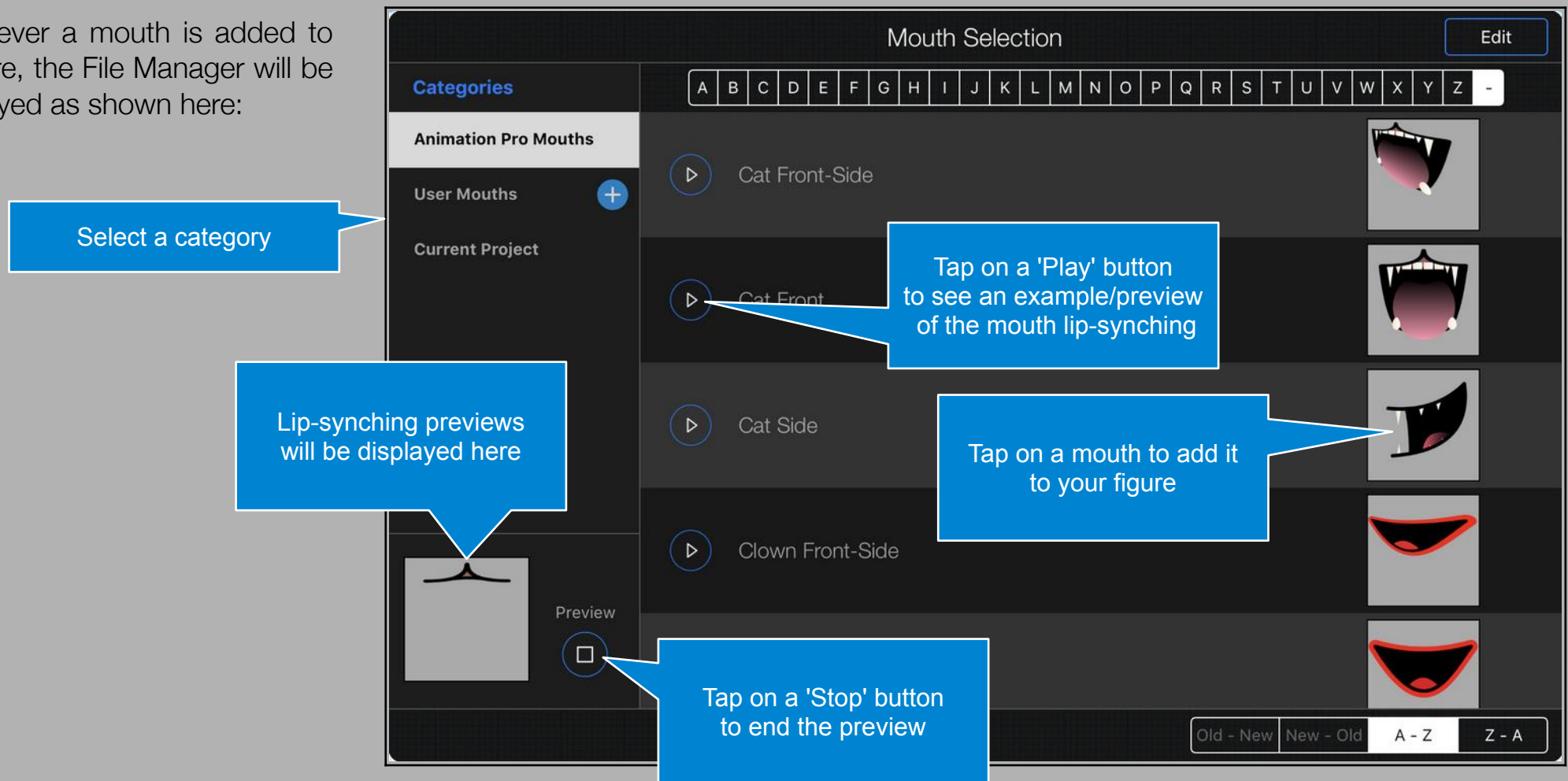
2. Press one of the buttons in the 'Replace With' panel:



Mouths

Animating speech, or lip-synching, has traditionally been a difficult and time consuming task, requiring a lot of different mouth shapes to be drawn and precisely timed with audio. Animation Pro makes this process much easier by providing a large collection of pre-drawn mouths that may be added to any figure. You can even create your own using the built in 'Mouth Creator'. These mouths contain a series of images, representing a variety of different mouth shapes. During the export process, Animation Pro will precisely match these images with your audio to give the illusion of speech. This is much more than mouths simply opening and closing with volume changes. Believe me, I had to write the code!

Whenever a mouth is added to a figure, the File Manager will be displayed as shown here:

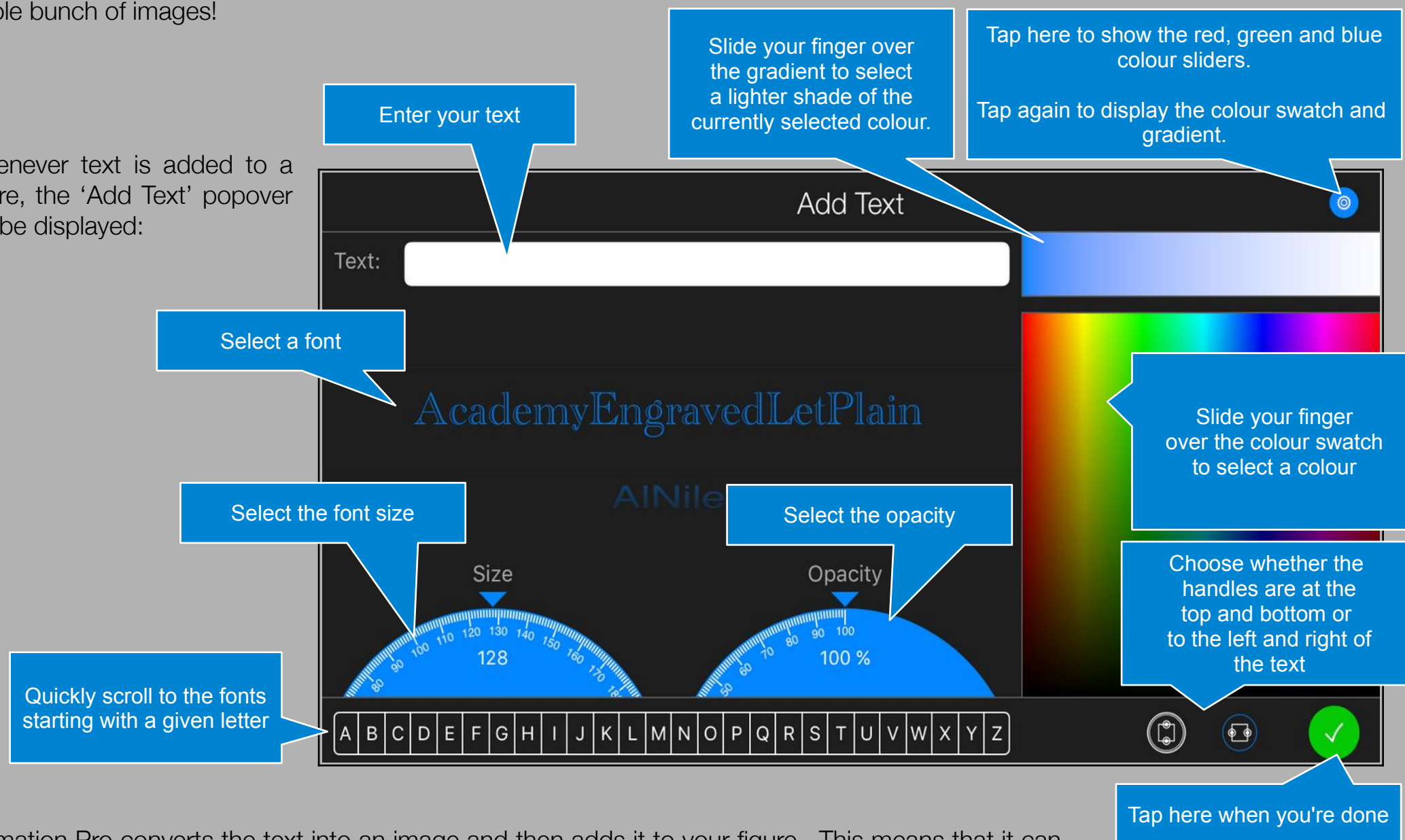


For more information about the 'Mouth Selection' File Manager, please refer to the 'File Manager' topic (left).

Text

It is possible to include text within the figures that you create. Perhaps you'd like to put some writing on the side of a truck or on the front of a character's shirt. If you happen to have an Emoji keyboard installed then this can be a great way to gain access to a whole bunch of images!

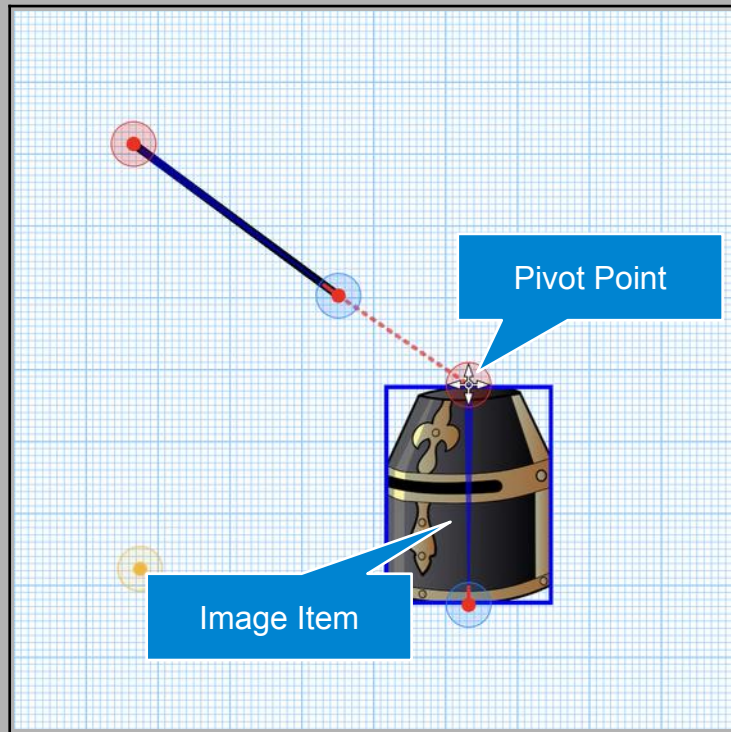
Whenever text is added to a figure, the 'Add Text' popover will be displayed:



Animation Pro converts the text into an image and then adds it to your figure. This means that it can be adjusted (moved, scaled, rotated, flipped etc.) just like any other image.

Please note:

Whenever an image, mouth or text item is added to a figure, two components are actually inserted:

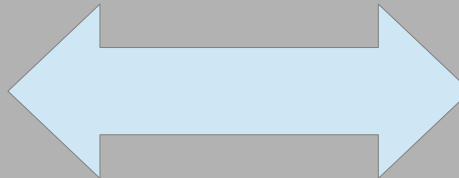


1. A pivot point

This is the point about which the image item will rotate.

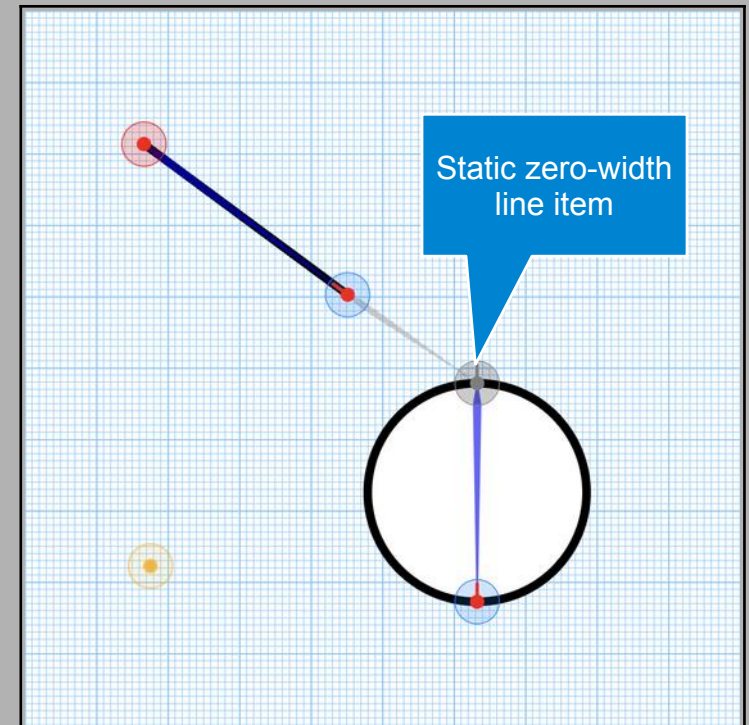
2. The item itself

The actual image, mouth or text item.



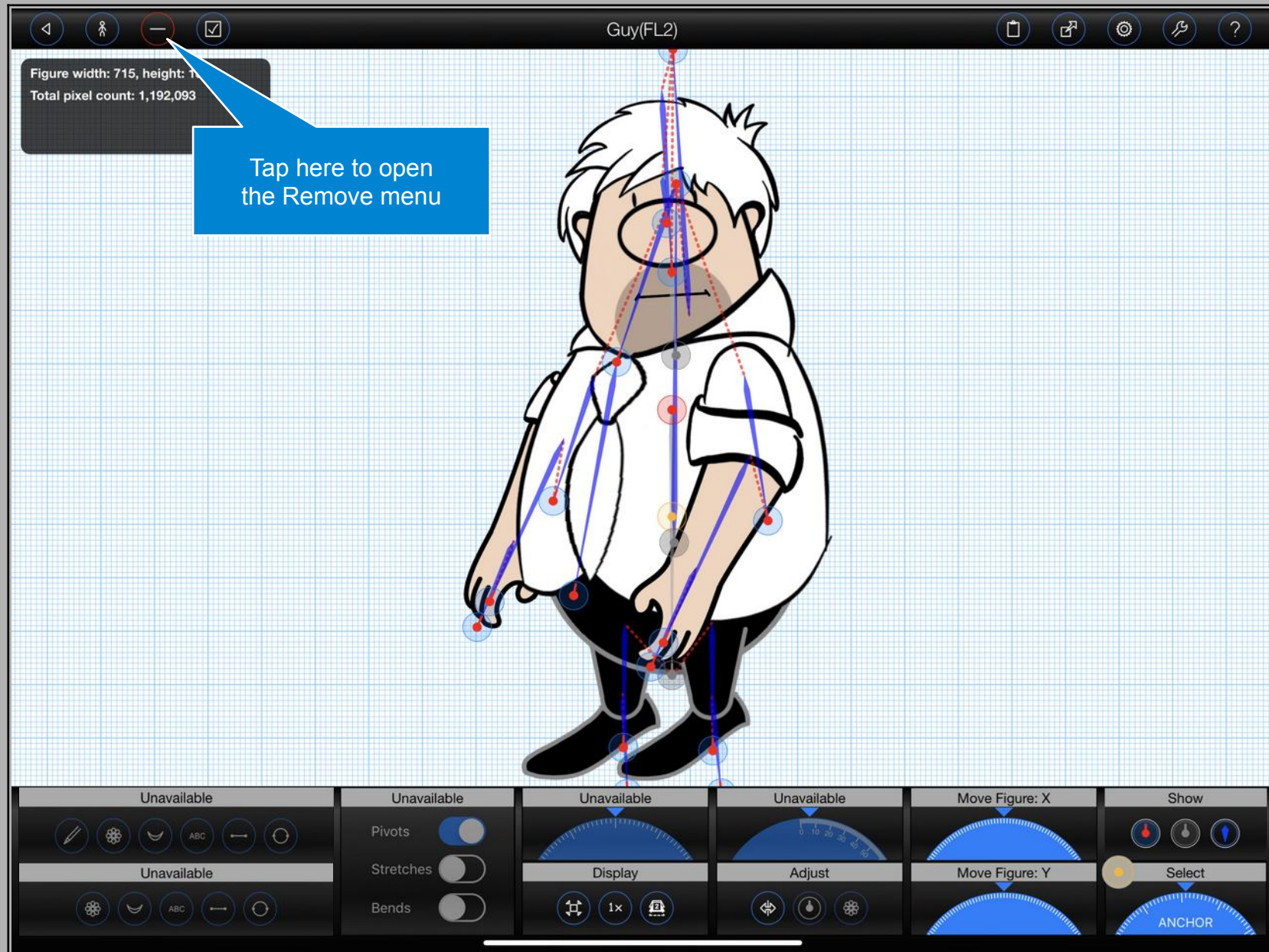
When such items are converted to circles or lines, the pivot point component will be replaced by a static zero-width line item such that the line or circle maintains the same position as the replaced item (see right).

When line or circle items are converted to image, mouth or text items, parent static zero-width lines will automatically be converted to pivot points; otherwise, where such a parent does not exist, a pivot point will be automatically inserted.



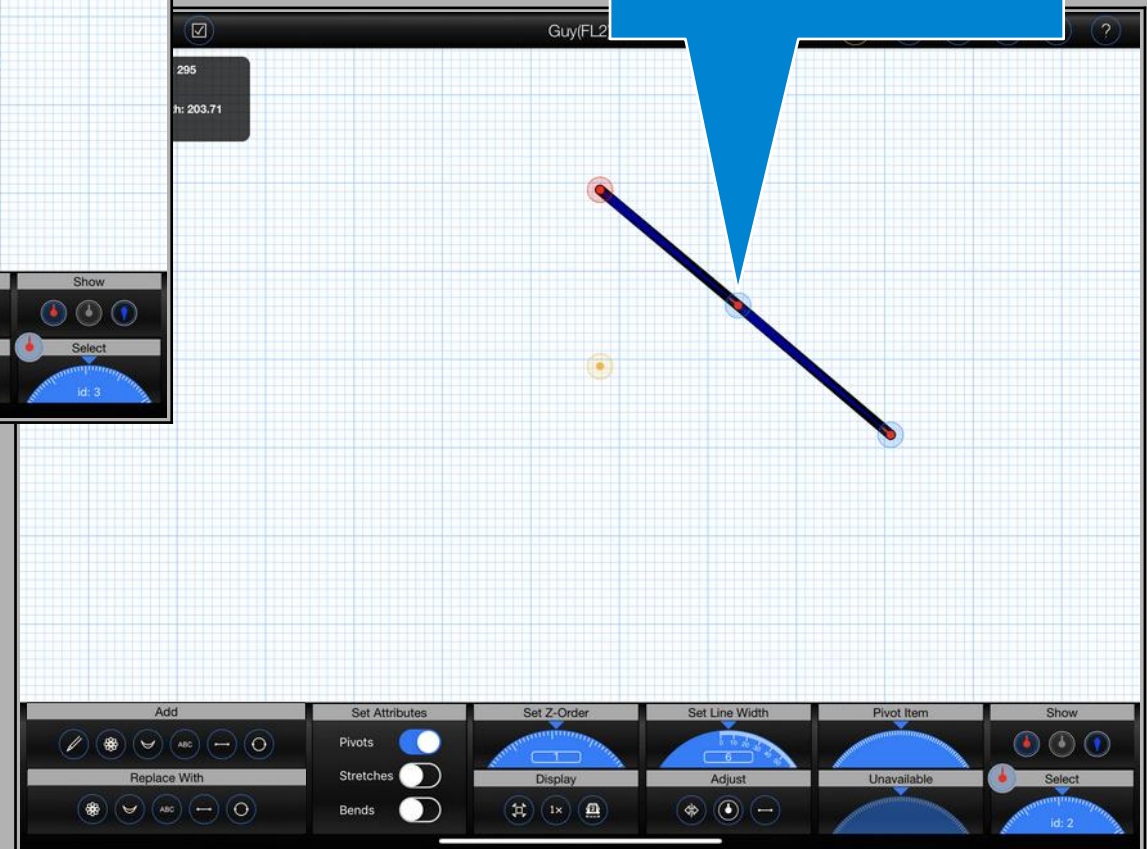
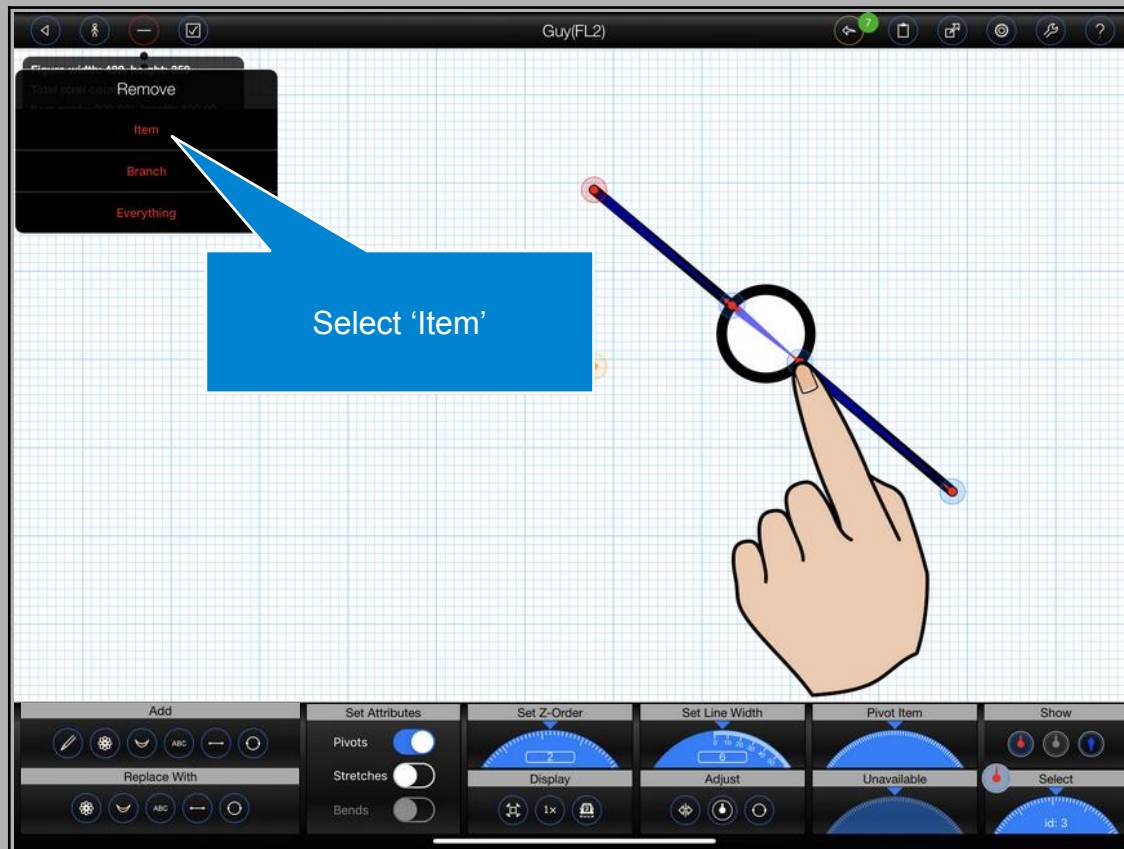
Removing Items From a Figure

Items may be removed from a figure via the red 'Remove' menu at the top of the screen:



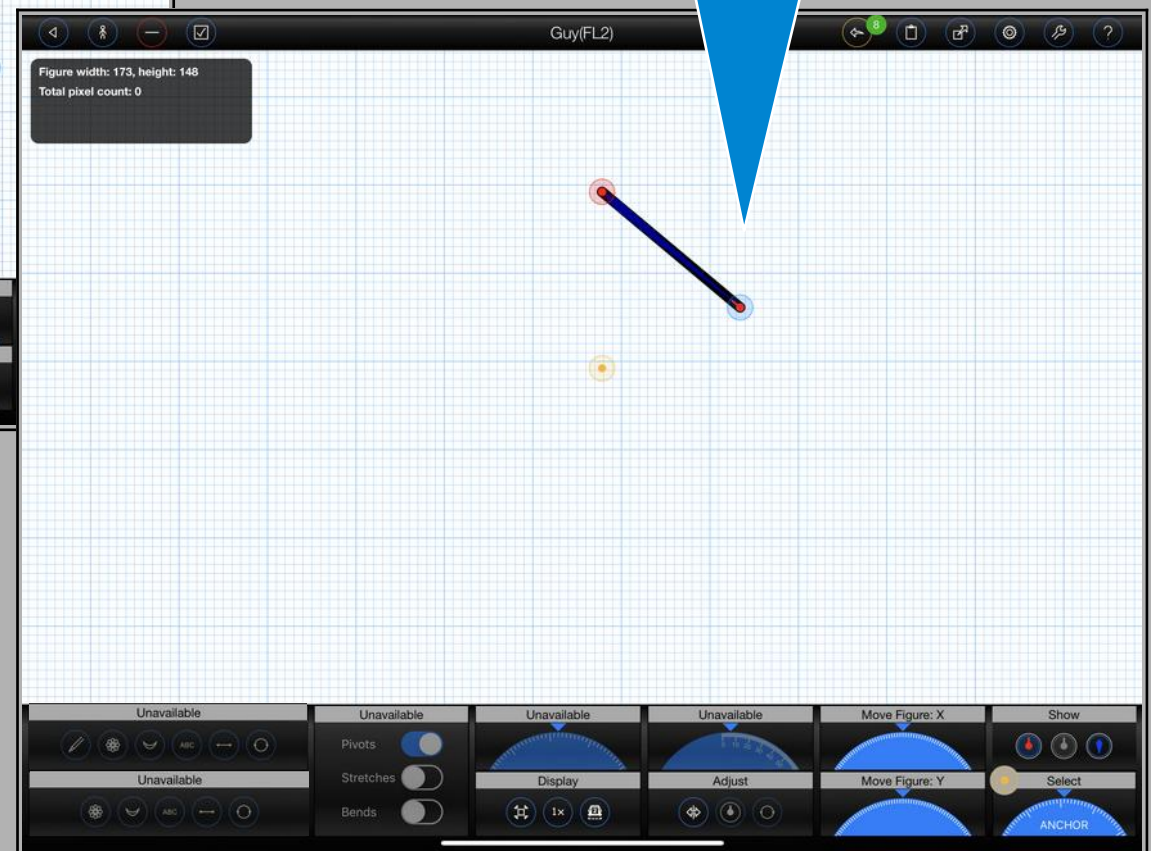
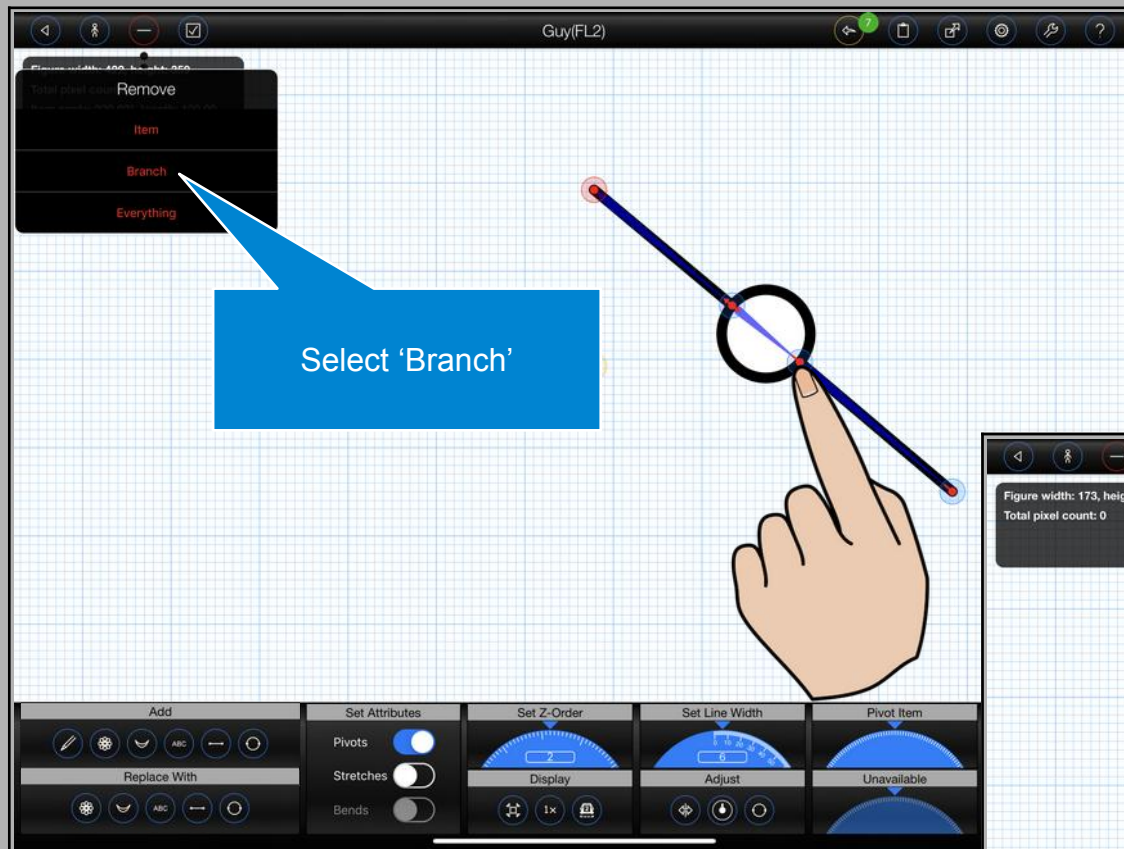
Removing an Item

To remove a single item from your figure, tap on the handle of the item to select it (the handle will start flashing) and choose 'Item' from the 'Remove' menu:



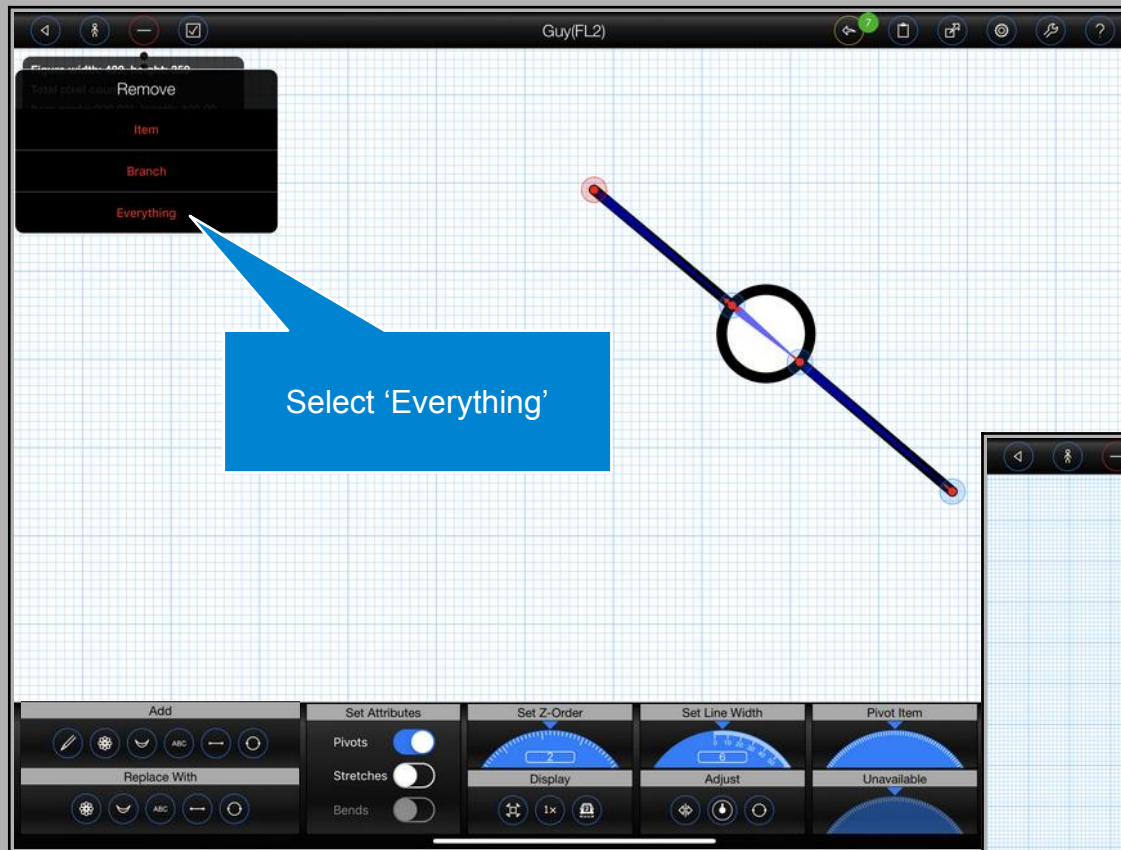
Removing a Branch

To remove a branch (i.e. a parent item and its children) from your figure, tap on the handle of the parent item to select it (the handle will start flashing) and choose 'Branch' from the 'Remove' menu:

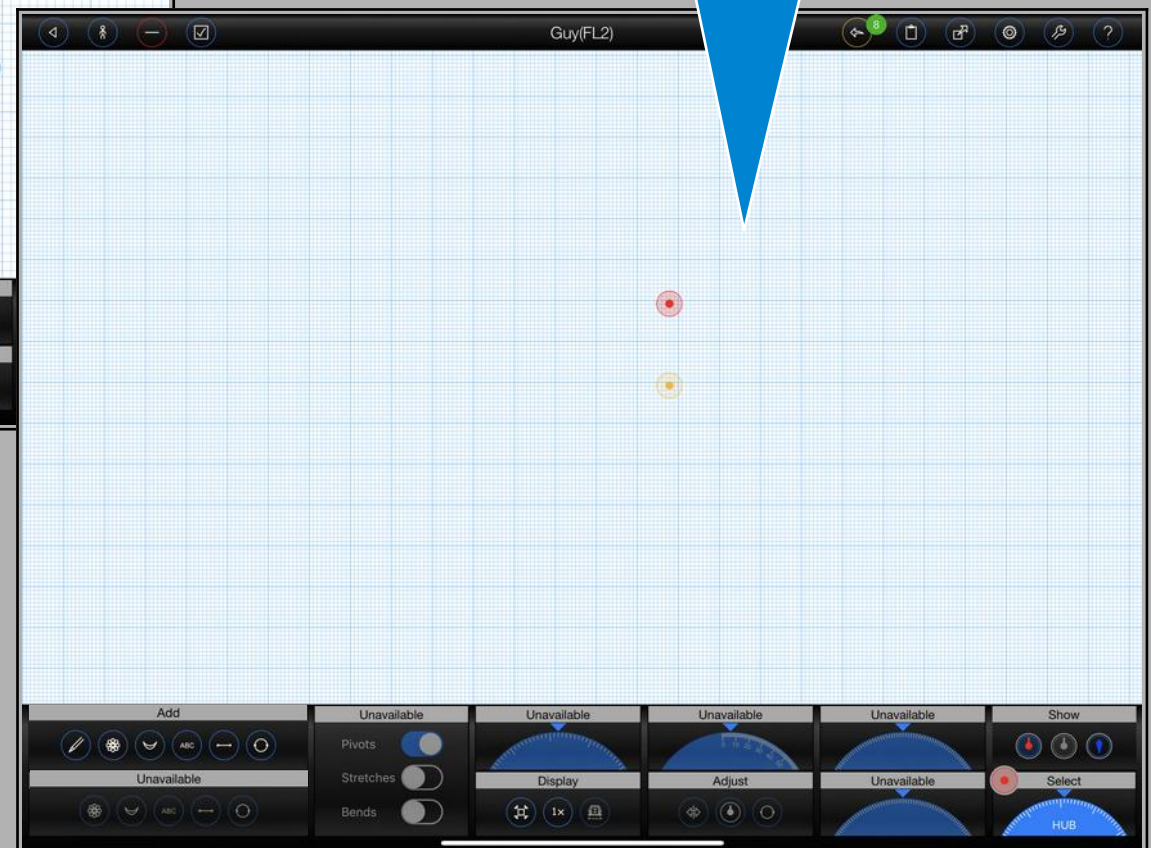


Removing Everything

To remove all items from a figure, choose 'Everything' from the 'Remove' menu:



All items are removed from the figure!

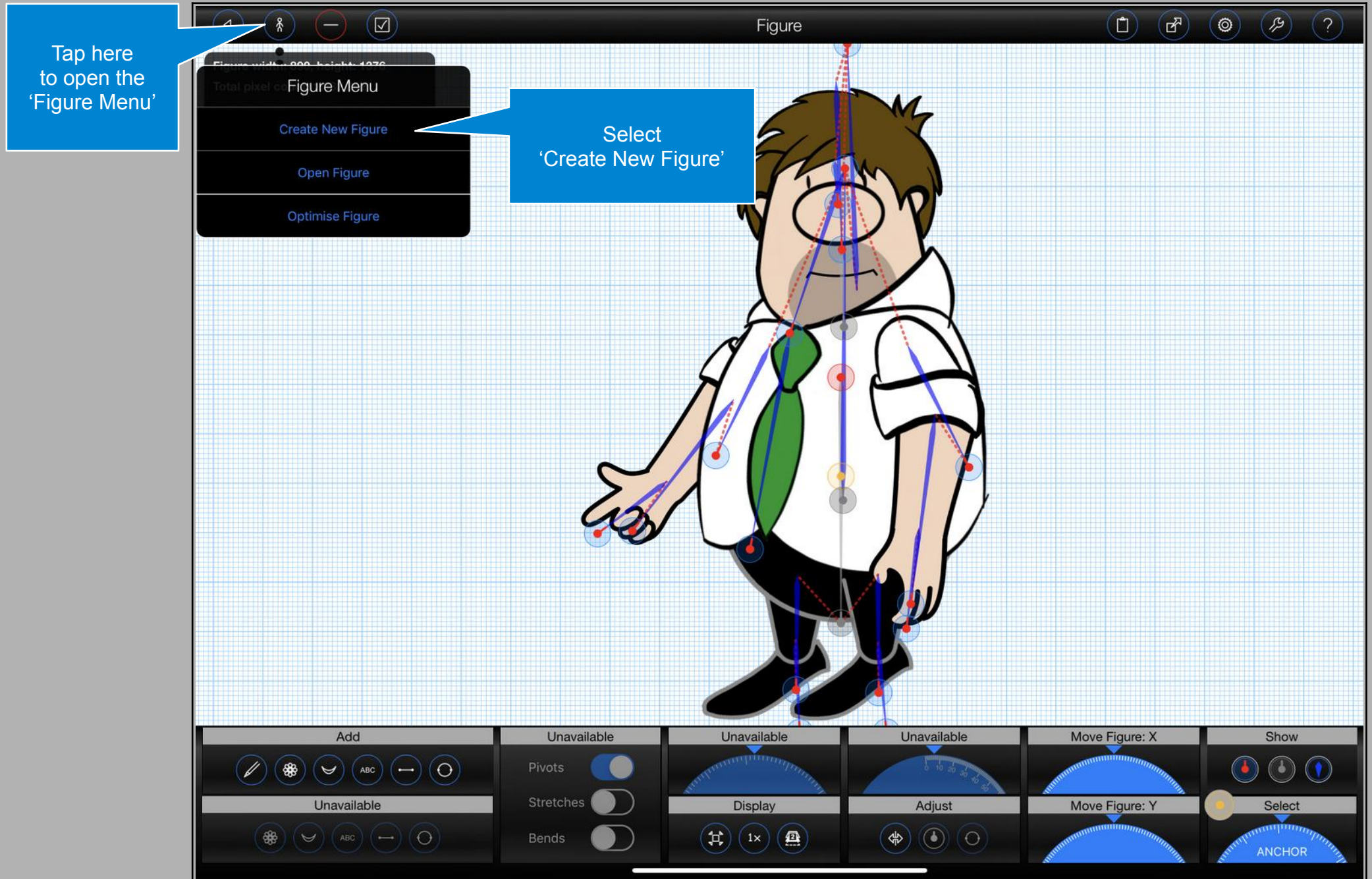


Please note:

You will still be working on the **SAME** figure after all items are removed. If you wish to create a **NEW** figure then please choose 'Create New Figure' from the 'Figure Menu' (see next page).

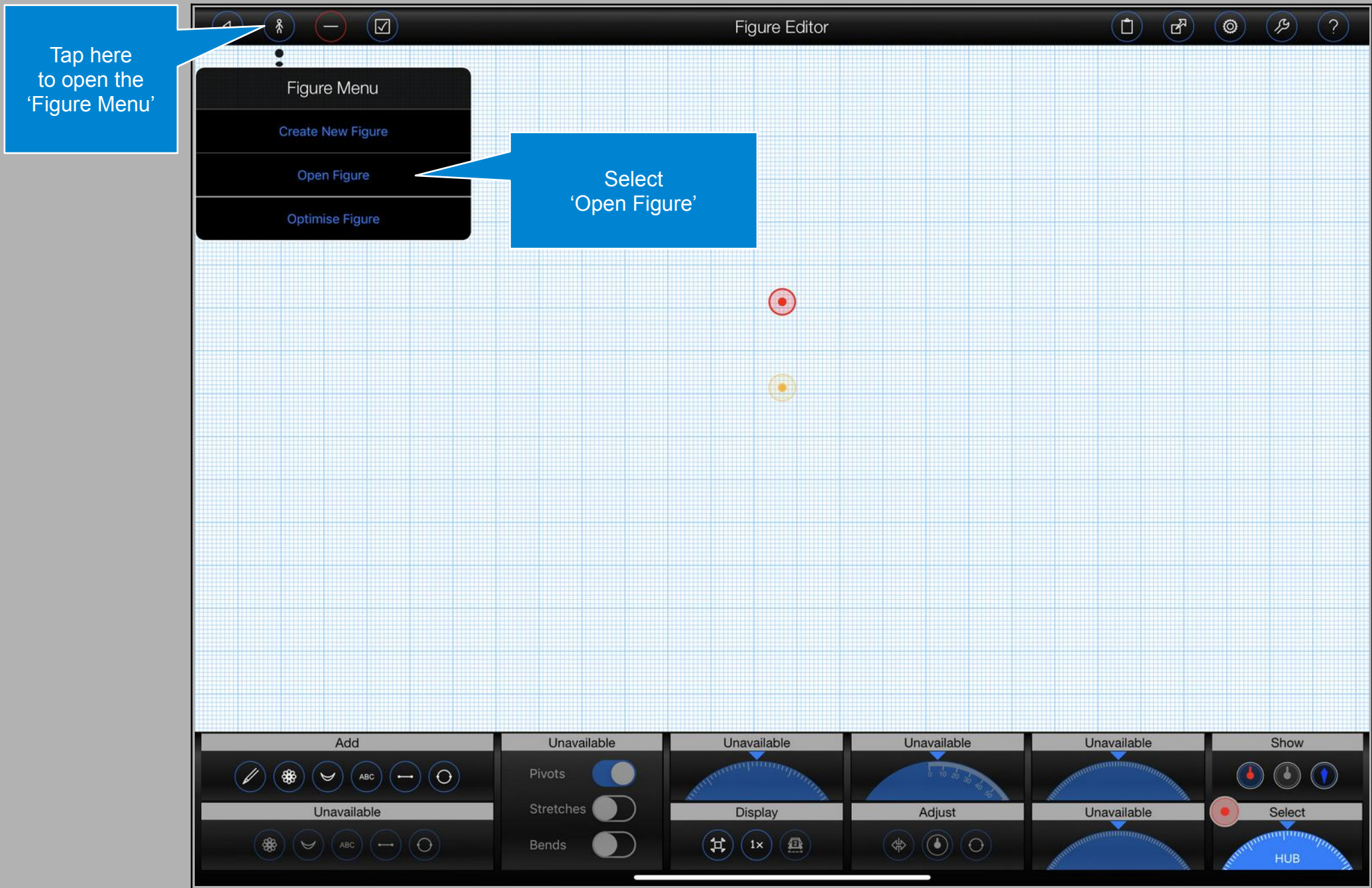
Creating a New Figure

You can start creating a brand spanking new figure by selecting 'Create a New Figure' from the 'Figure Menu' as shown below:



Opening an Existing Figure

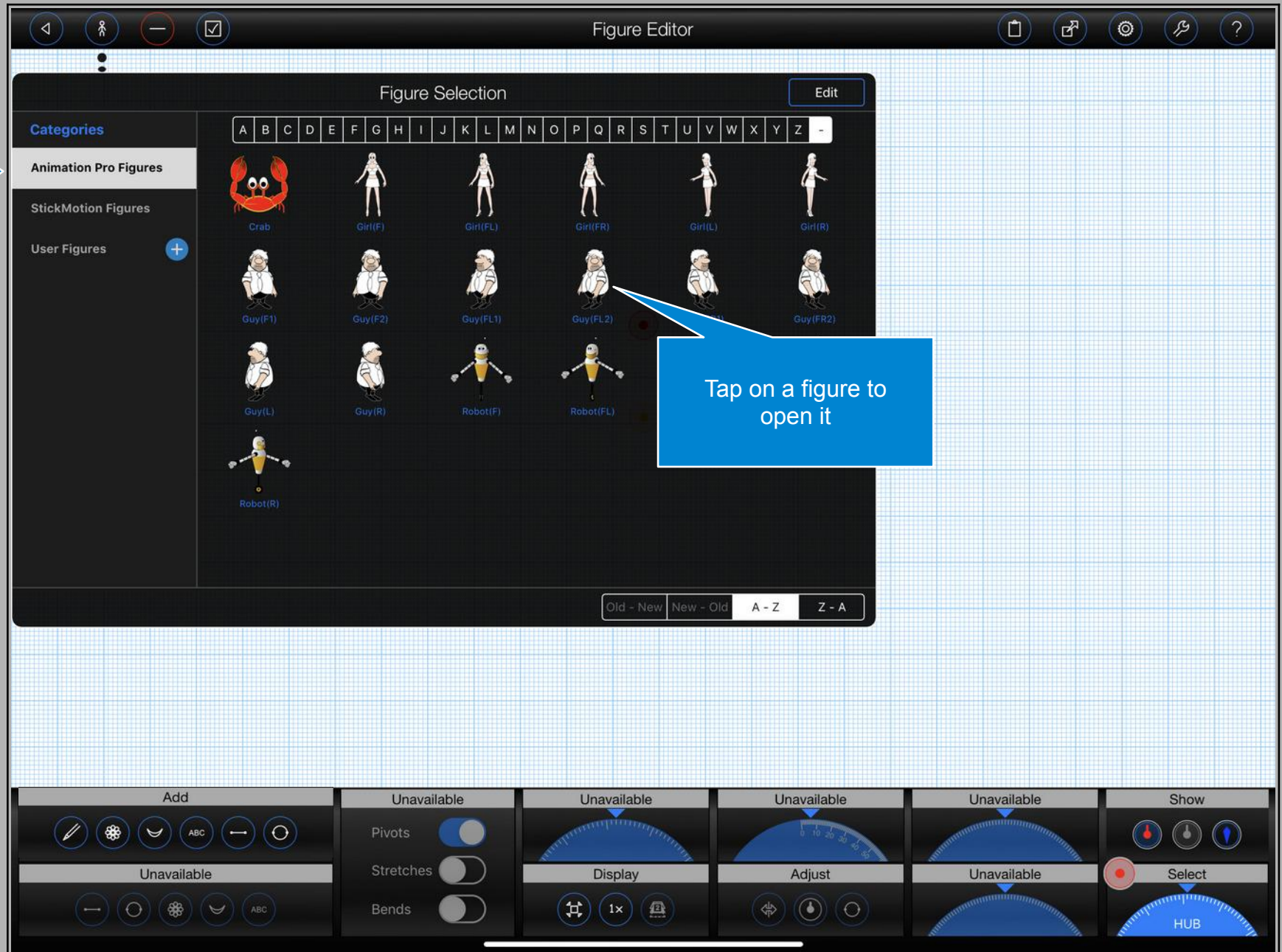
You can open an existing figure (for editing) by choosing 'Open Figure' from the 'Figure Menu' as shown below:



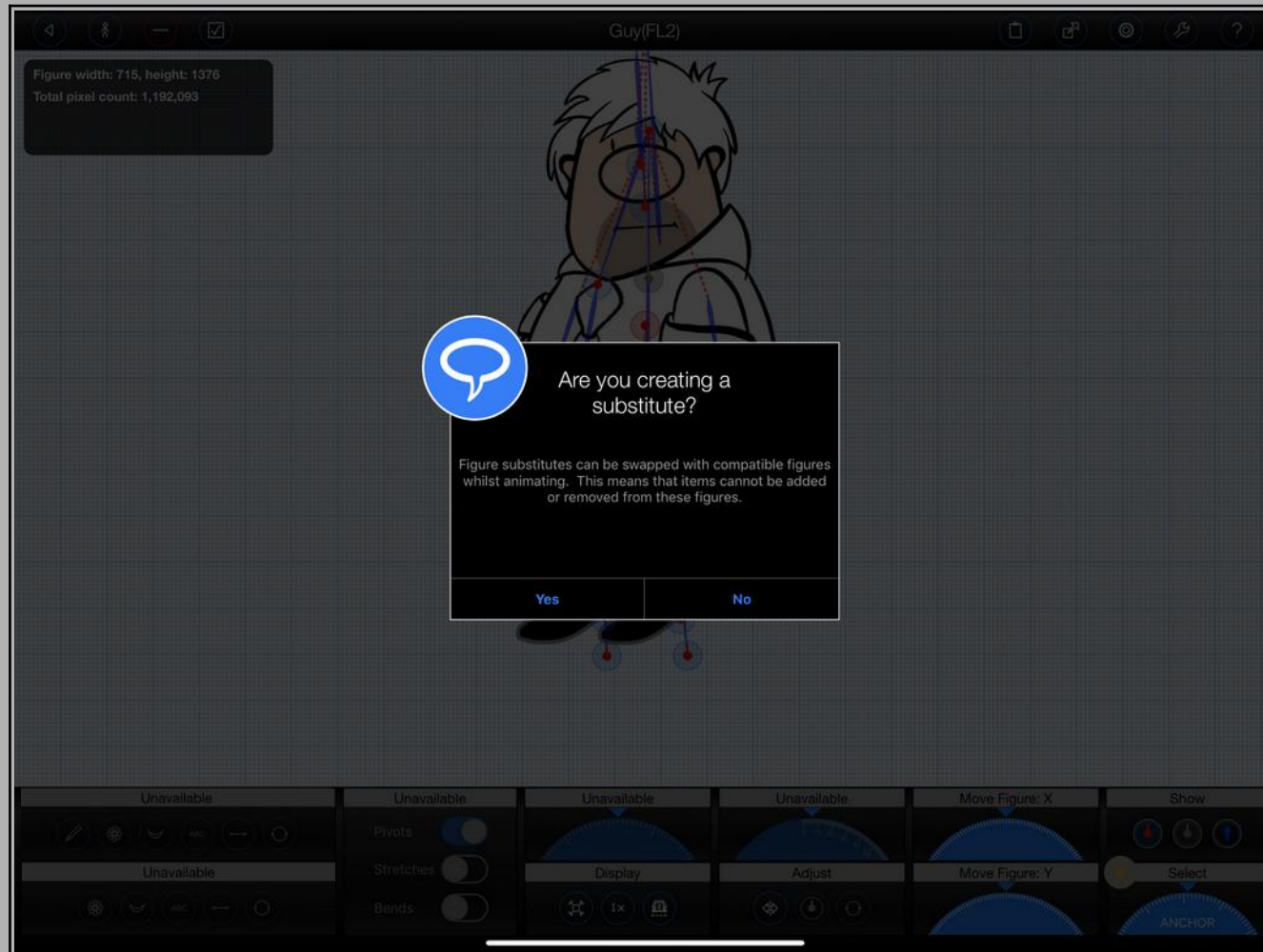
This will open the Animation Pro File Manager, allowing you to select a figure for editing. For more information on how to use the Animation Pro File Manager, please refer to the 'File Manager' topic in the help (see left).

Select a
'Category'.

Your figures
will be saved
under the
'User Figures'
category.



Animation Pro will ask if you wish to create a substitute:



Whilst animating, there may be times where it is necessary to swap in a different version of a figure; perhaps, for example, you wish to make a figure turn around by replacing a front-on view of the figure with a side-on view. These different versions/views of the **SAME** figure are best handled by creating substitutes. For more information, please refer to the 'Substitutions' topic in the Animation Pro help (see left).

If you simply wish to create a brand new figure based upon an existing figure, or continue to work on an unfinished figure, then please select 'No'.

Saving Figures

In previous versions of Animation Pro (versions prior to 1.8), saving a figure **always** created a new version of the figure in the File Manager.

THIS IS NO LONGER THE CASE!

Saving a New Version of a Figure

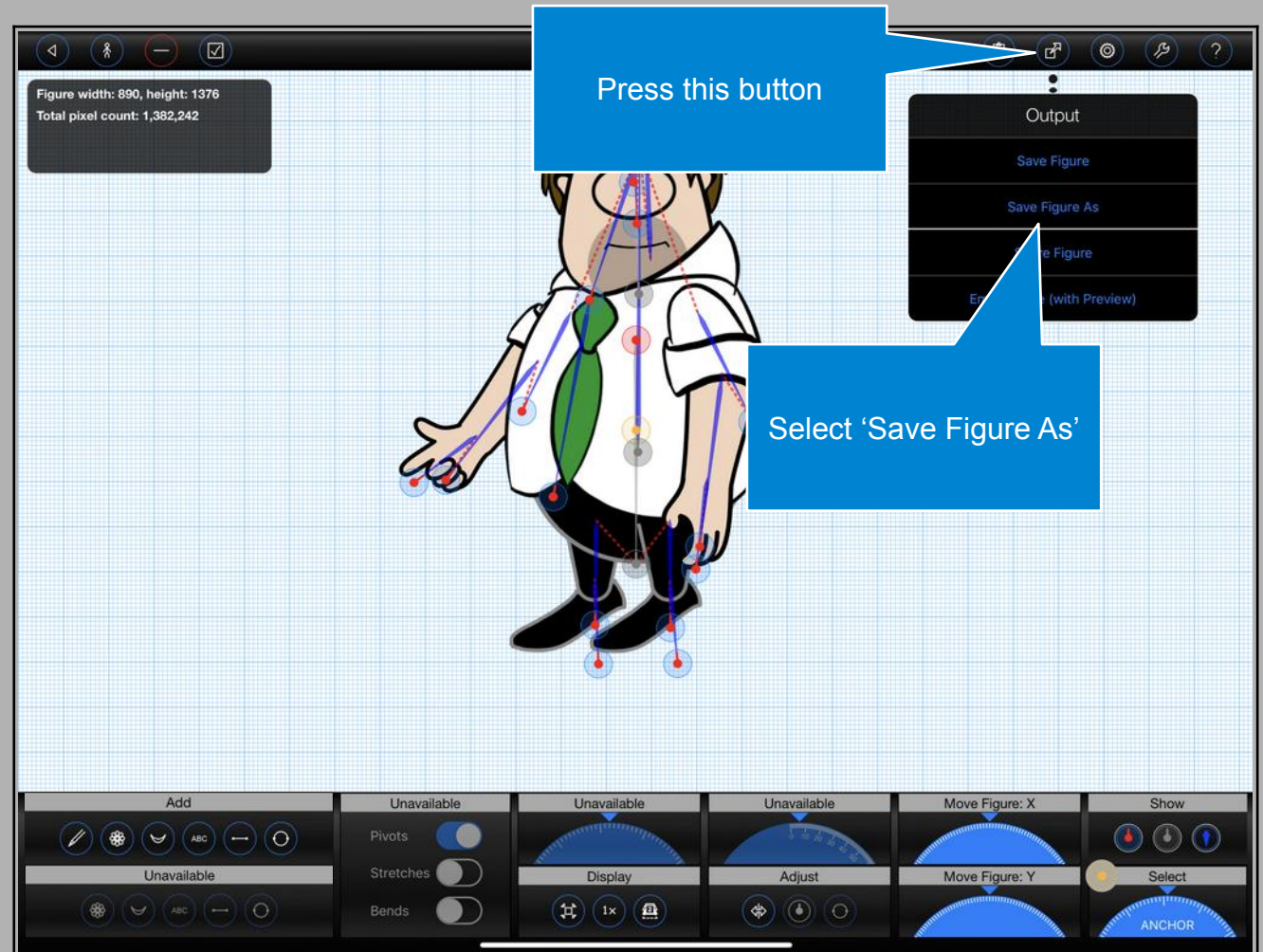
If you have opened an existing figure and wish to save it as a new version, select 'Save Figure As' from the 'Output' menu as shown below:

Animation Pro will prompt you to give your figure a name.

Please note:

You can give the figure the same name – it will still be unique in the File Manager!

Figures will always be saved under the 'User Figures' category in the File Manager.



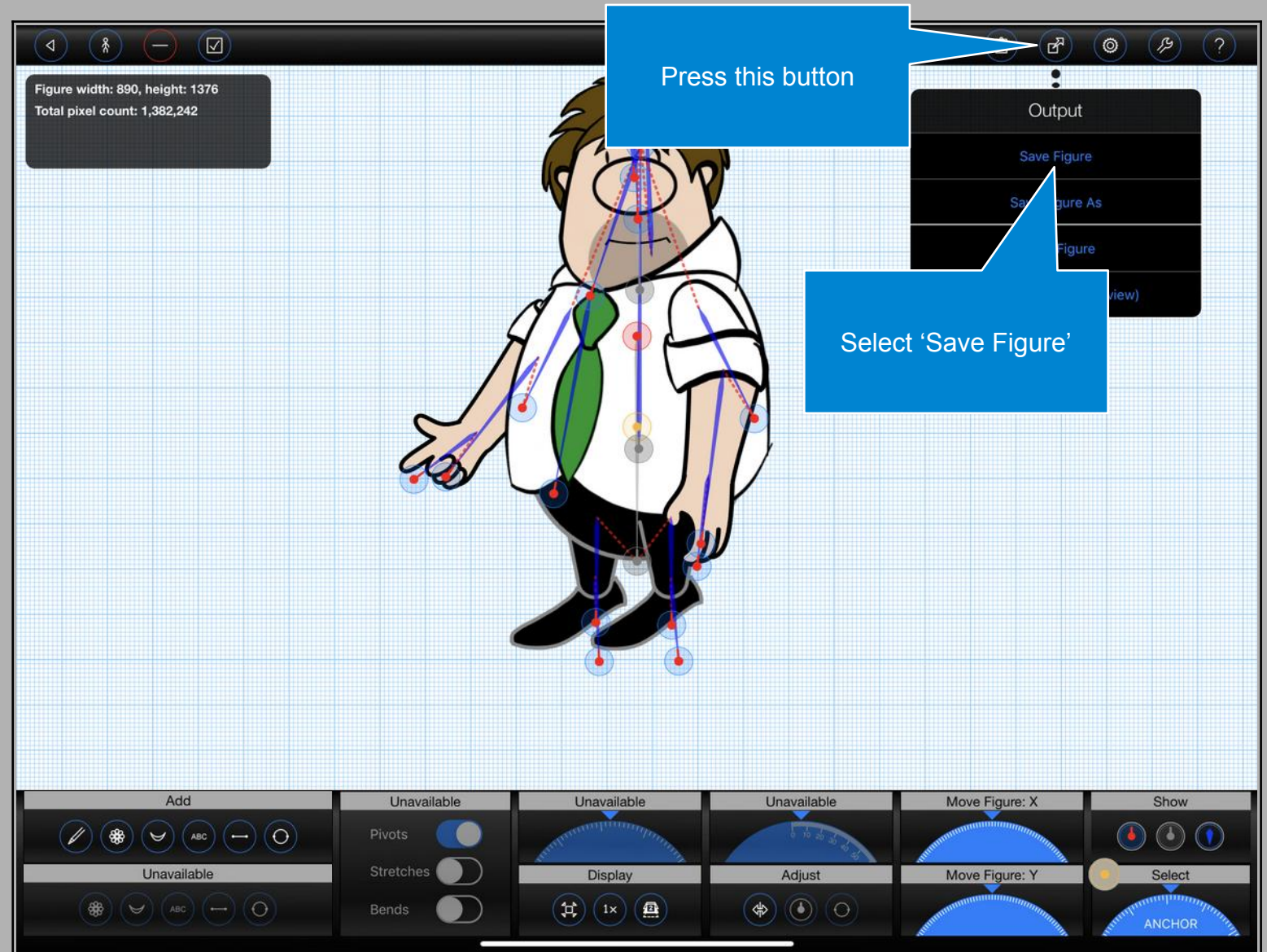
Saving Over an Existing Figure

If you have opened an existing figure and wish to overwrite (save over) it, select 'Save Figure' from the 'Output' menu as shown below:

Please note:

The 'Save Figure' option will not be available if you have opened an 'Animation Pro' or 'StickMotion' figure.

Figures will always be saved under the 'User Figures' category in the File Manager.

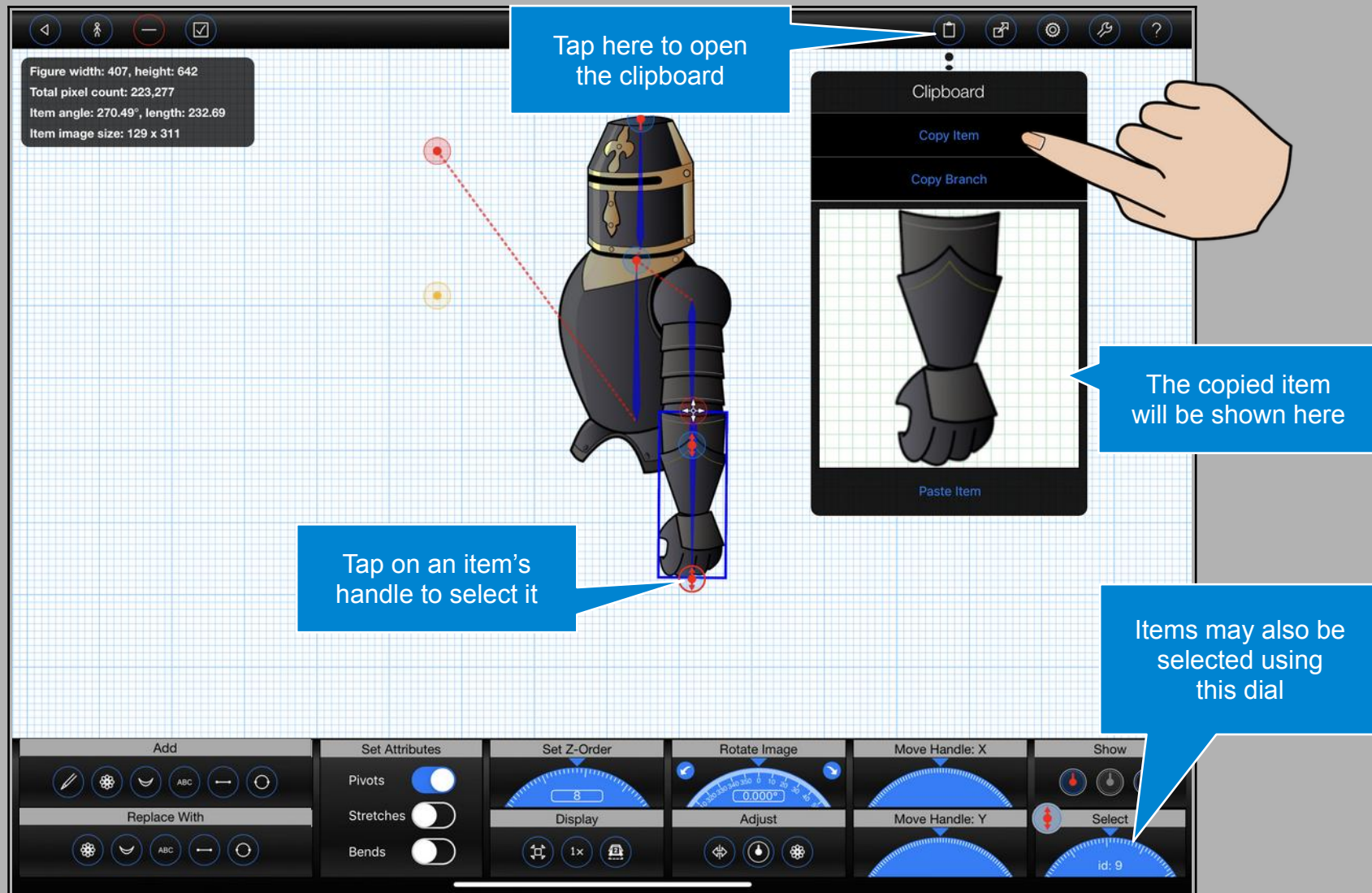


The Clipboard

Now I'm pretty lazy. If I've already added a left arm to a figure, I don't want to have to go through all of the same steps all over again to add a right arm. The Figure Editor thus includes a clipboard that will make it easy to copy and paste items or even entire branches.

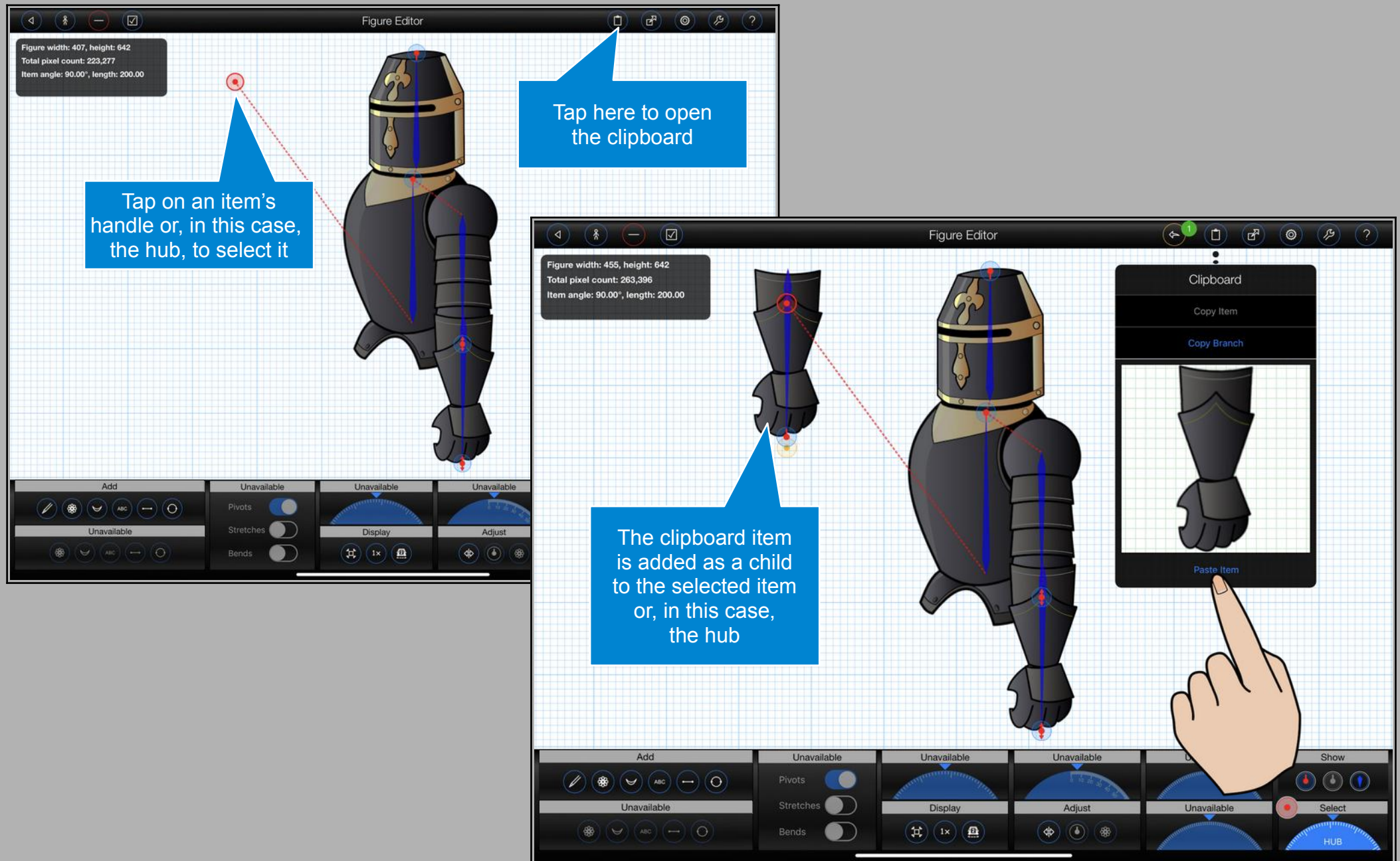
Copying an Item

Tap on an item's handle to select it (the handle will start flashing) and then select 'Copy Item' from the Clipboard as shown below:



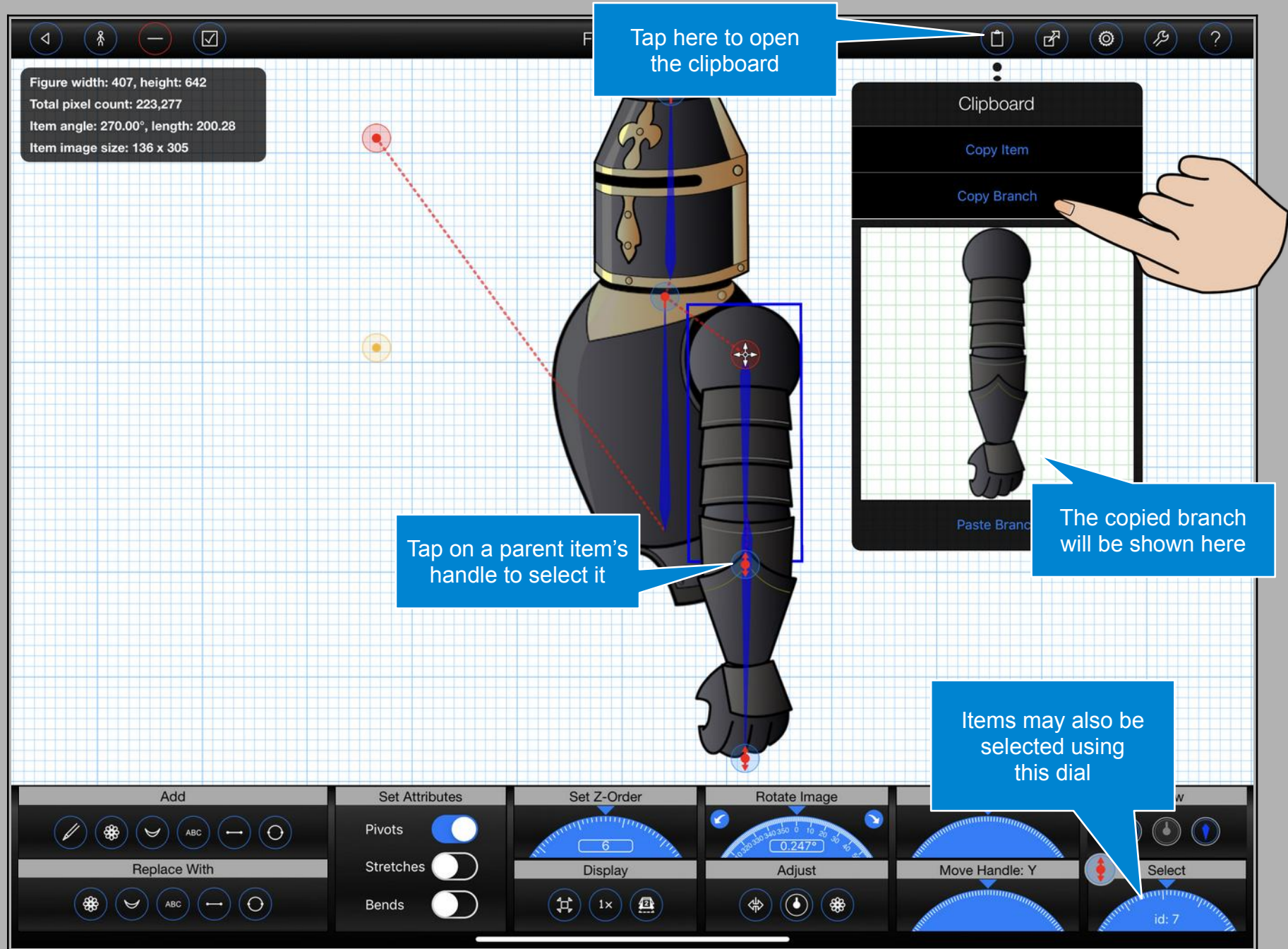
Pasting an Item

Select the hub, or the item that you wish to join the clipboard item to, and then select 'Paste Item' from the Clipboard as shown below:



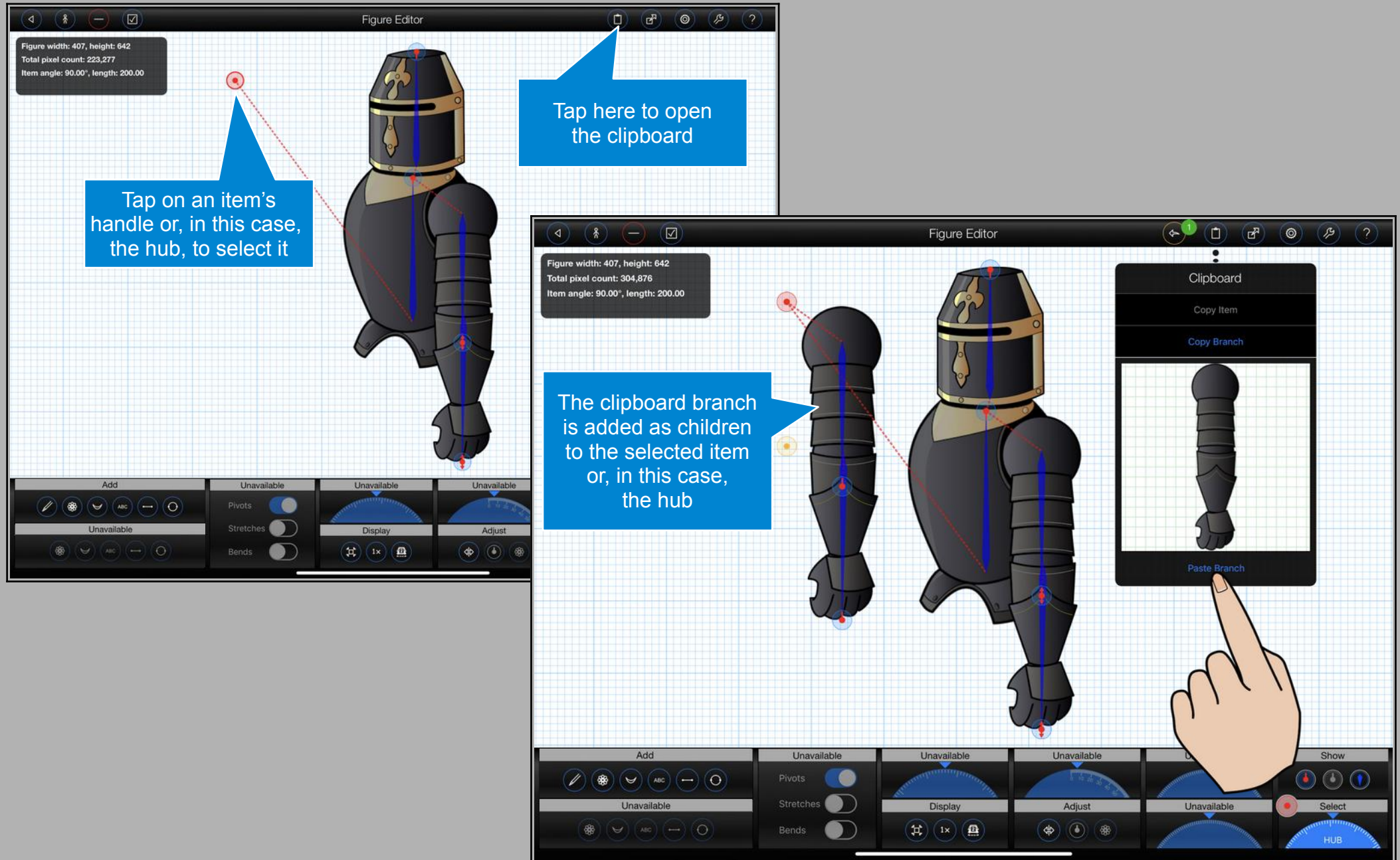
Copying a Branch

Tap on the handle of a parent item to select it (the handle will start flashing) and then select 'Copy Branch' from the Clipboard as shown below:



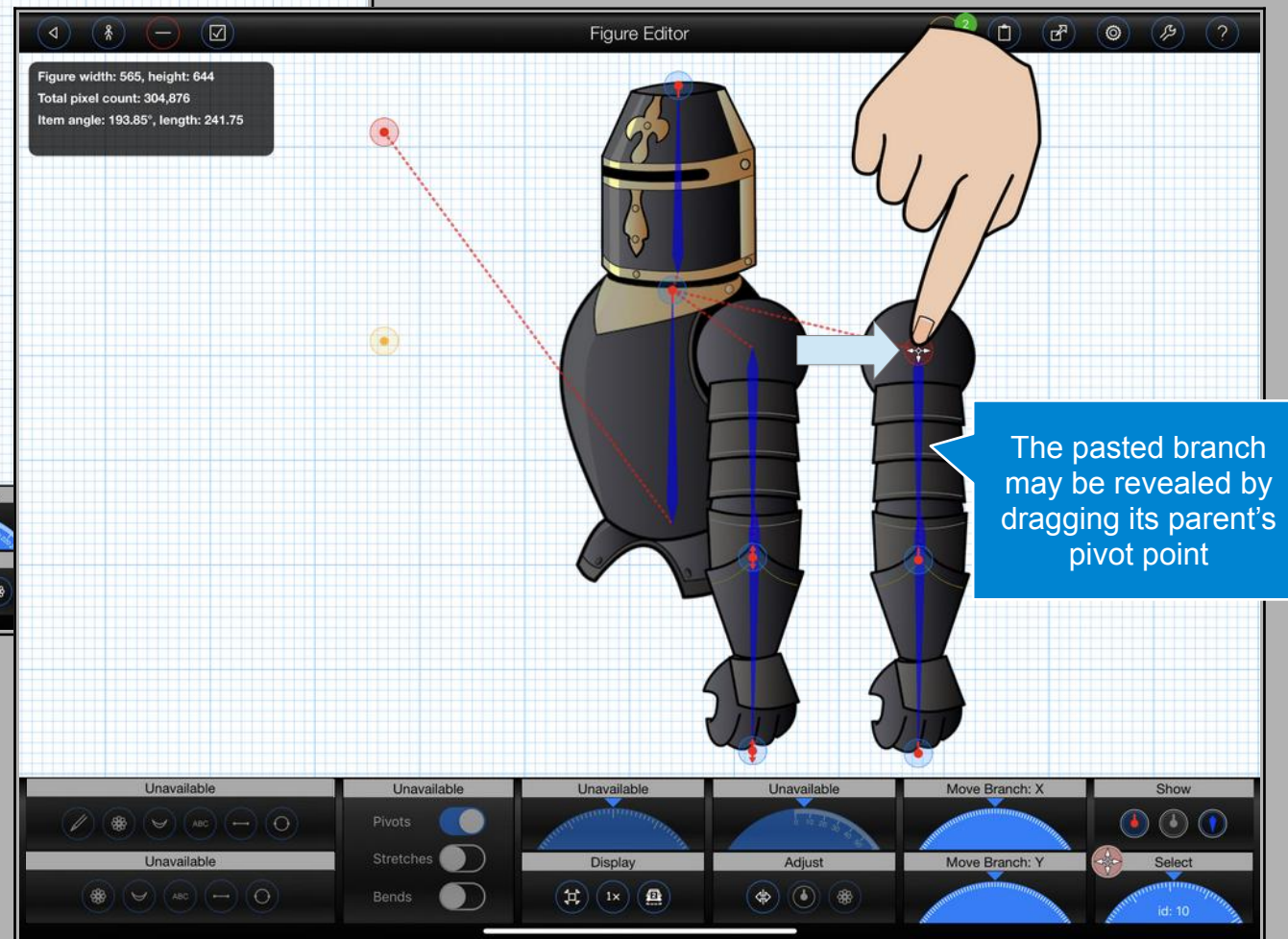
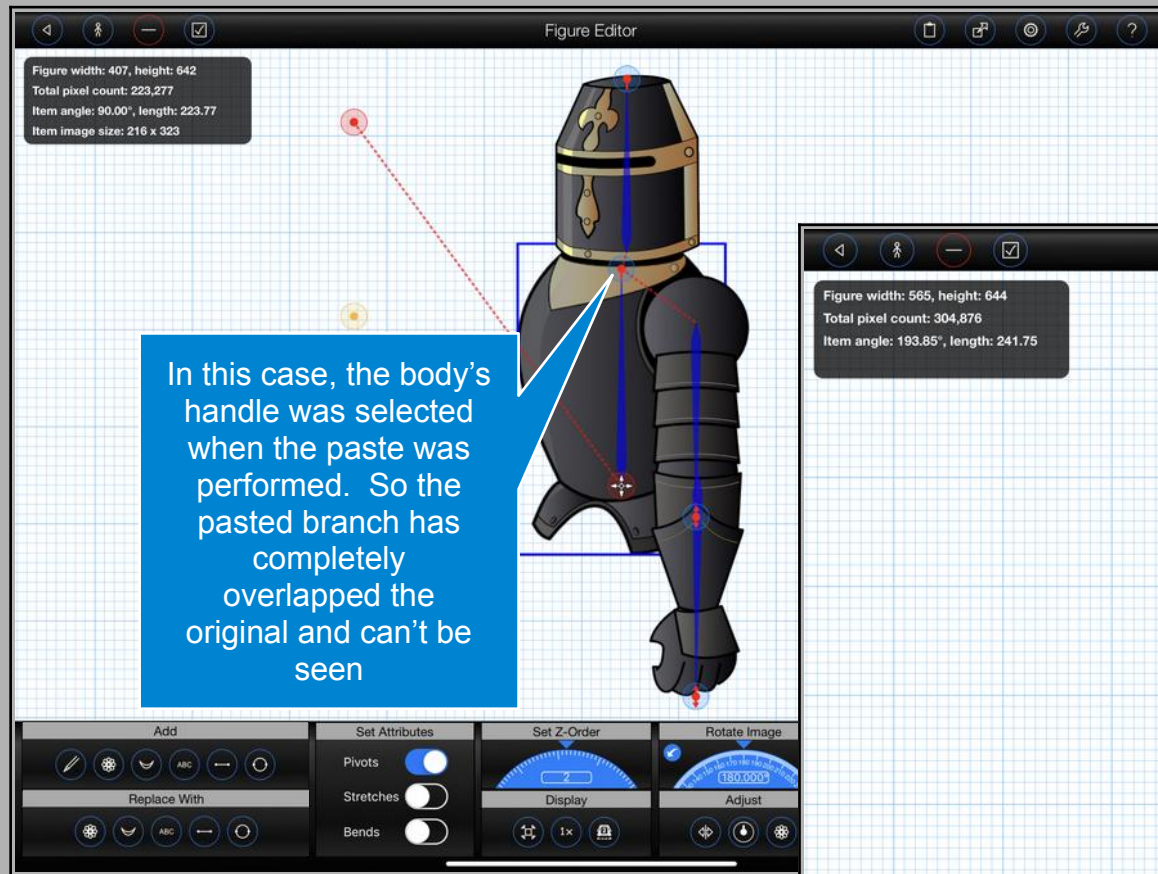
Pasting a Branch

Select the hub, or the item that you wish to join the clipboard item to, and then select 'Paste Item' from the Clipboard as shown below:



Please note:

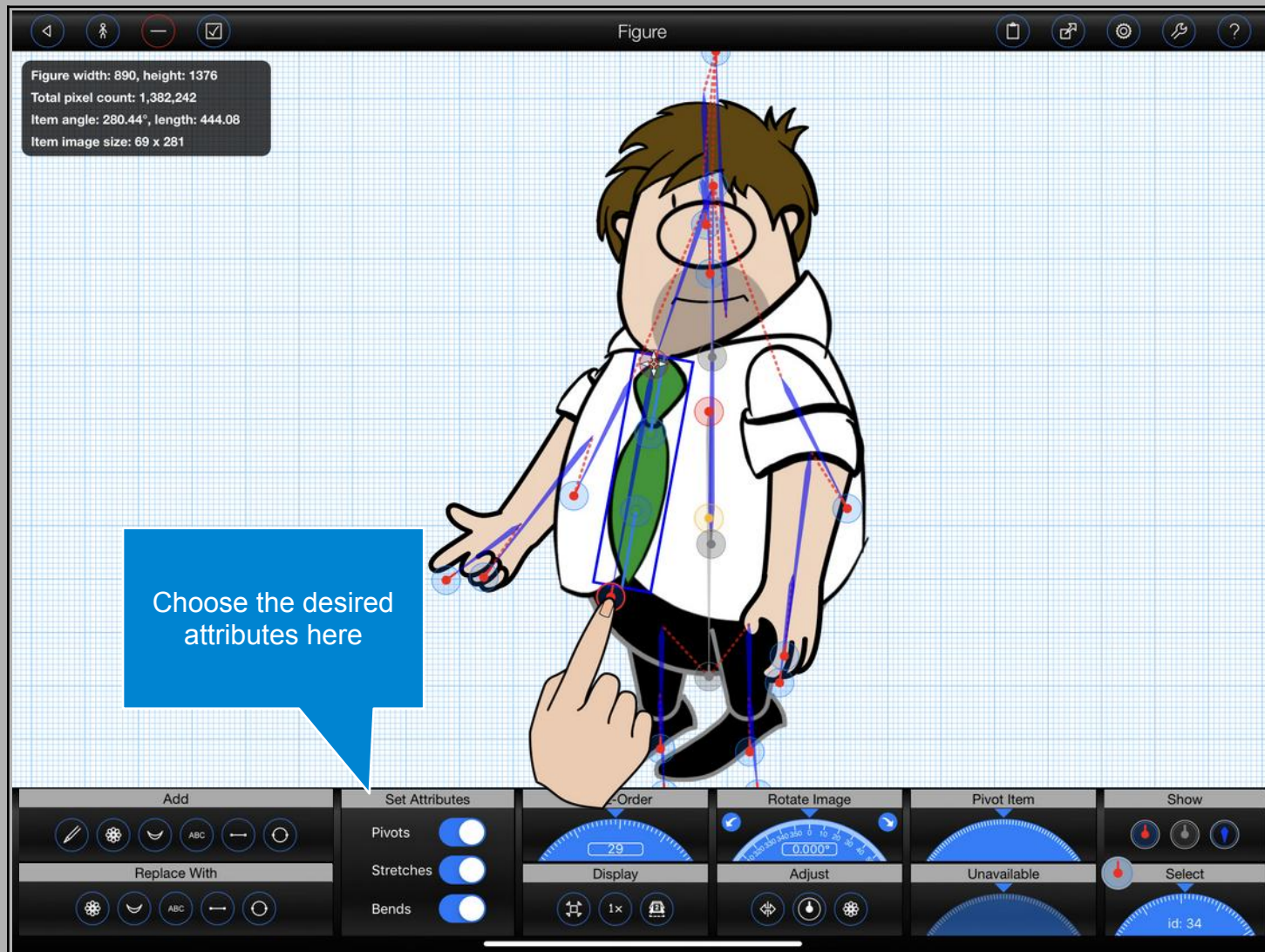
If you paste an item (or branch) onto the same parent it originally belonged to, you may not be able to see the newly pasted item (or branch) as it will overlap the original:



Item Attributes

The items within figures may be assigned different attributes to define their behaviour whilst animating (and I'm not talking about 'naughty vs. 'nice'). To change an item's attributes:

1. Select an item by tapping on its handle (the handle will start flashing)
2. Turn the switches on or off in the 'Set Attributes' panel according to your requirements (see next pages for details)

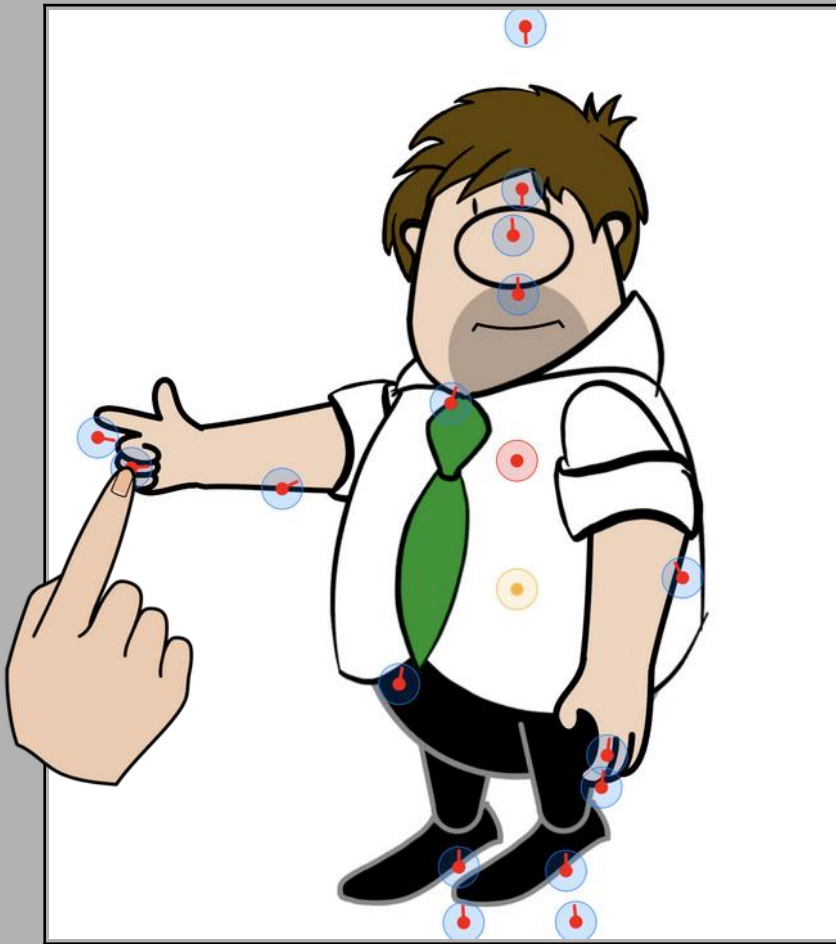


Attributes

Items within a figure may have one or more of the following attribute combinations:

Pivots

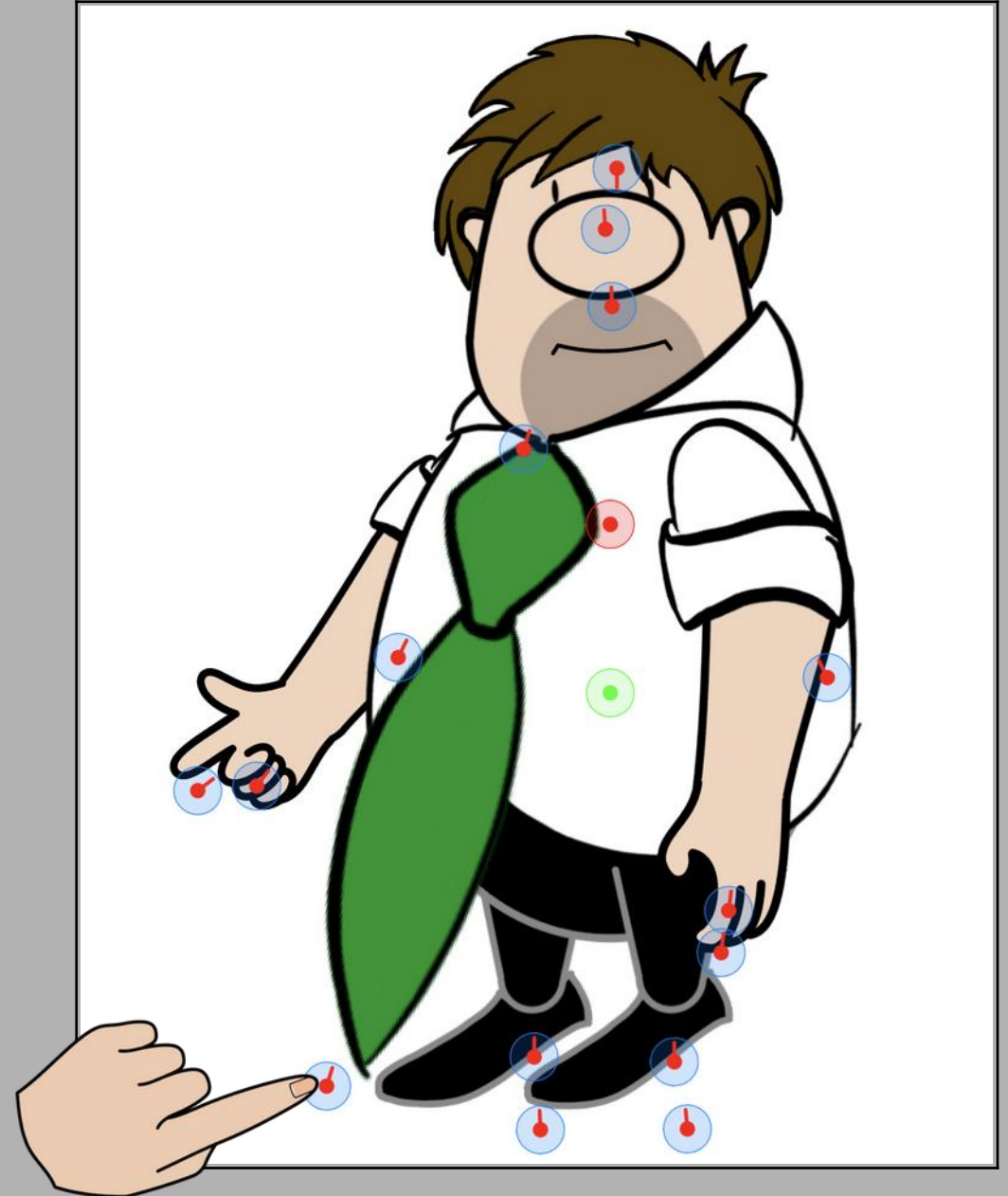
Items may be pivoted whilst animating:



Please note: If the 'Pivots' switch is turned off, none of the other attributes may be set – the item will be **STATIC** and may not be moved whilst animating.

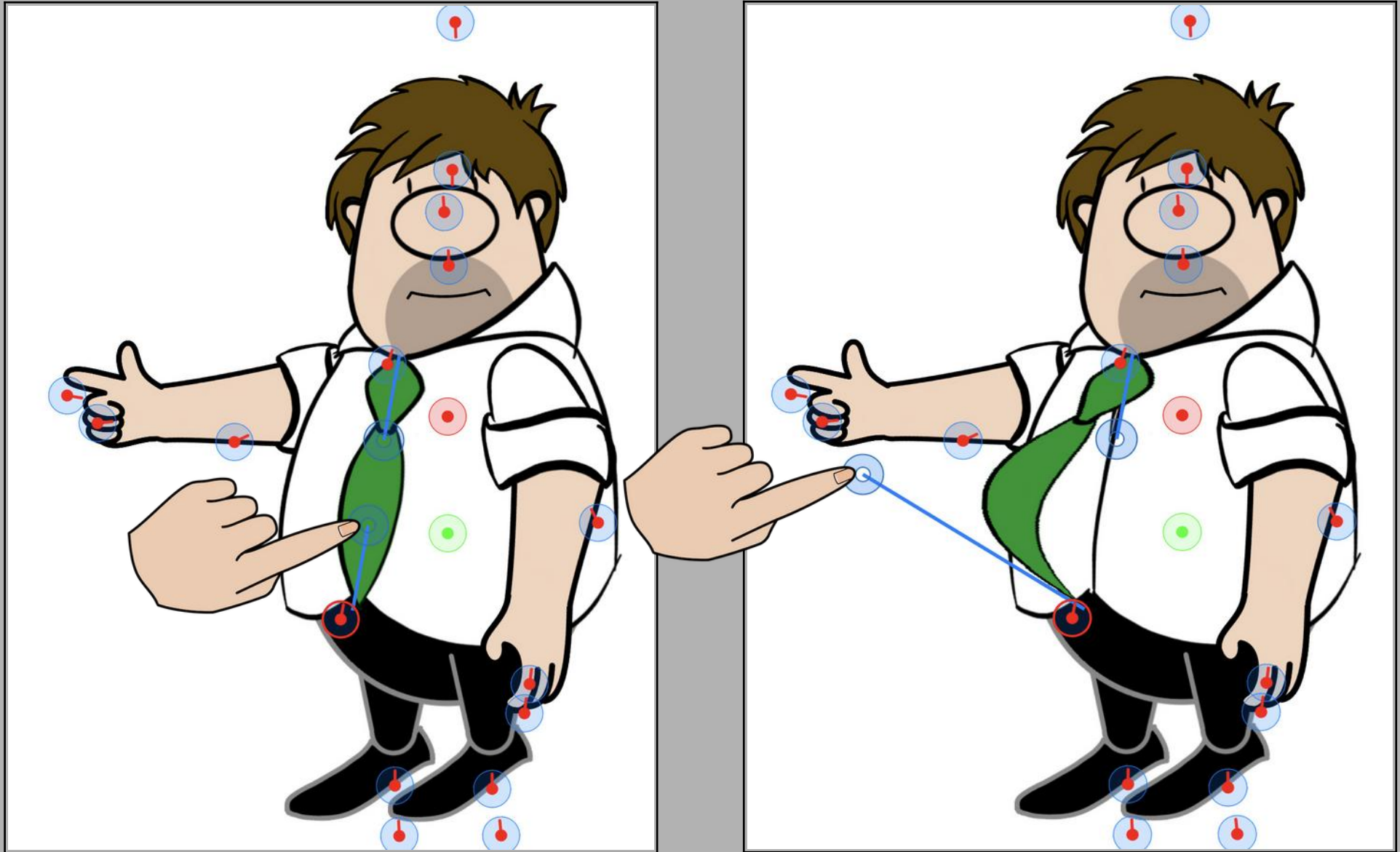
Pivots + Stretches

Items may be stretched (enlarged/reduced) whilst animating:



Pivots + Bends

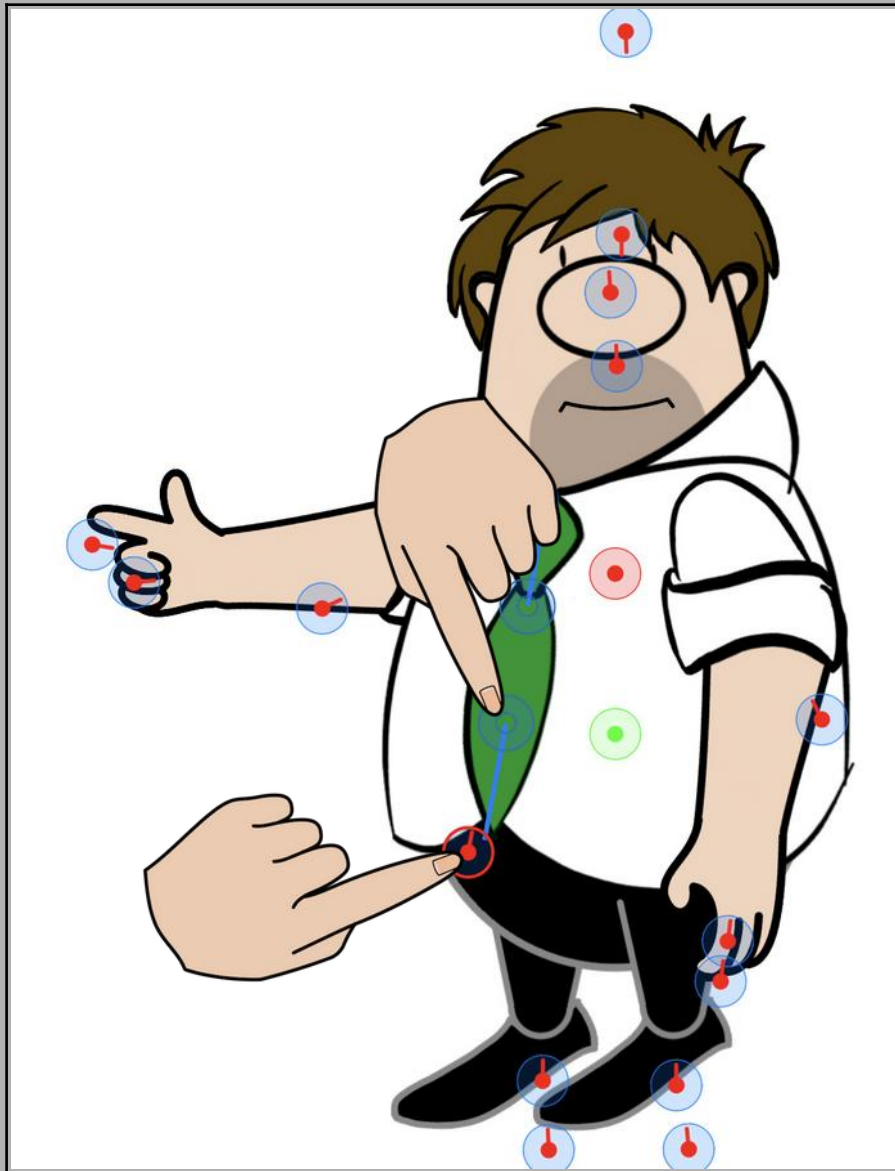
Items (excluding circles) may be bent whilst animating:



Please note: Image/mouth/text items are always bent about their Y-Axis

Pivots + Bends + Stretches

Items (excluding circles) may be bent and stretched whilst animating:



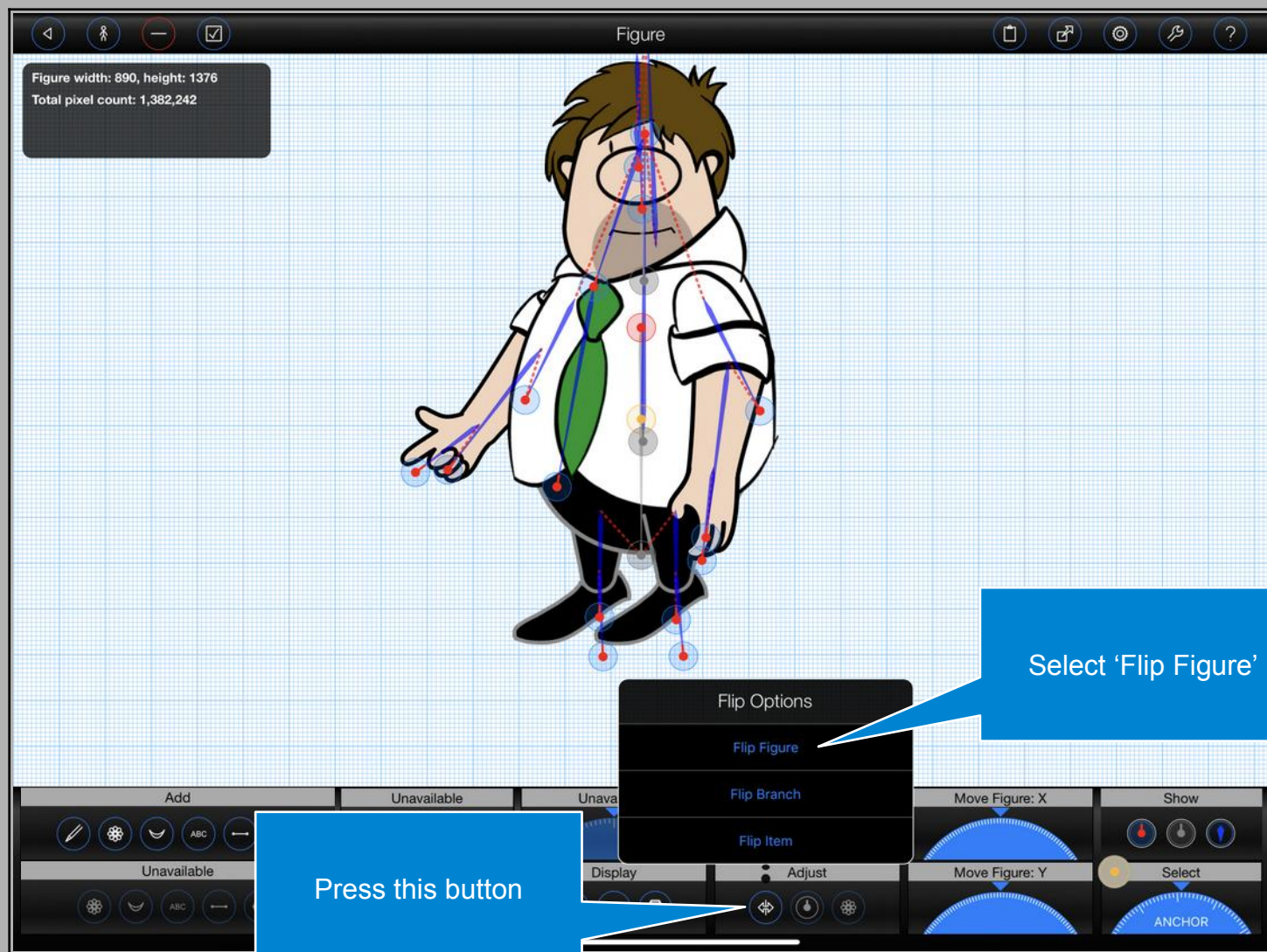
Please note: In this case, both the bending and stretching will occur along the images Y-Axis for image/mouth/text items.

Flipping

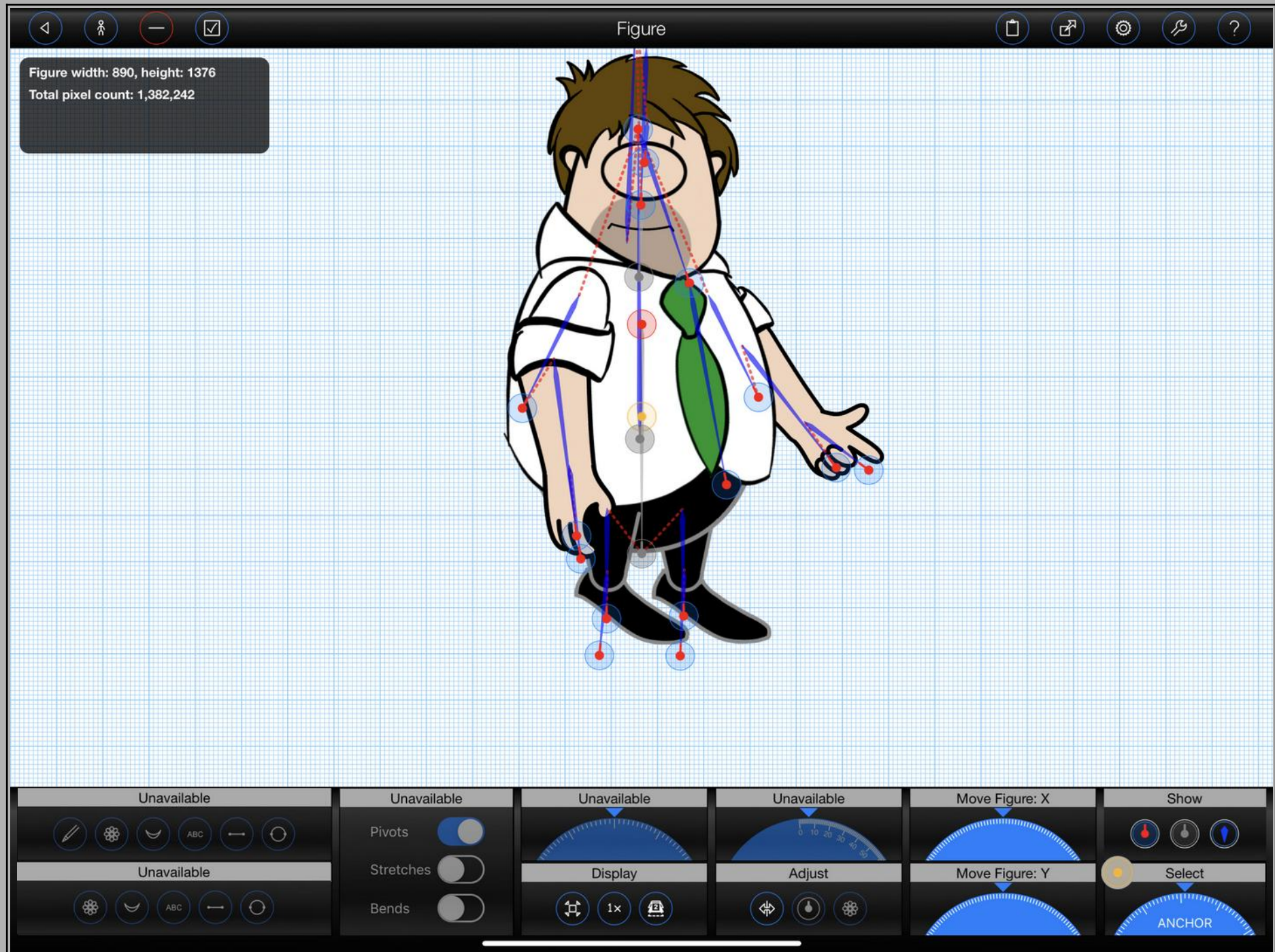
Items, branches, or the entire figure may be flipped. Flipping a branch, for example, can be used to turn a left arm into a right arm after pasting it from the clipboard. Believe me, it really has nothing to do with coins or real estate!

Flipping a Figure

Open the 'Flip Options' menu and choose 'Flip Figure' as shown below:

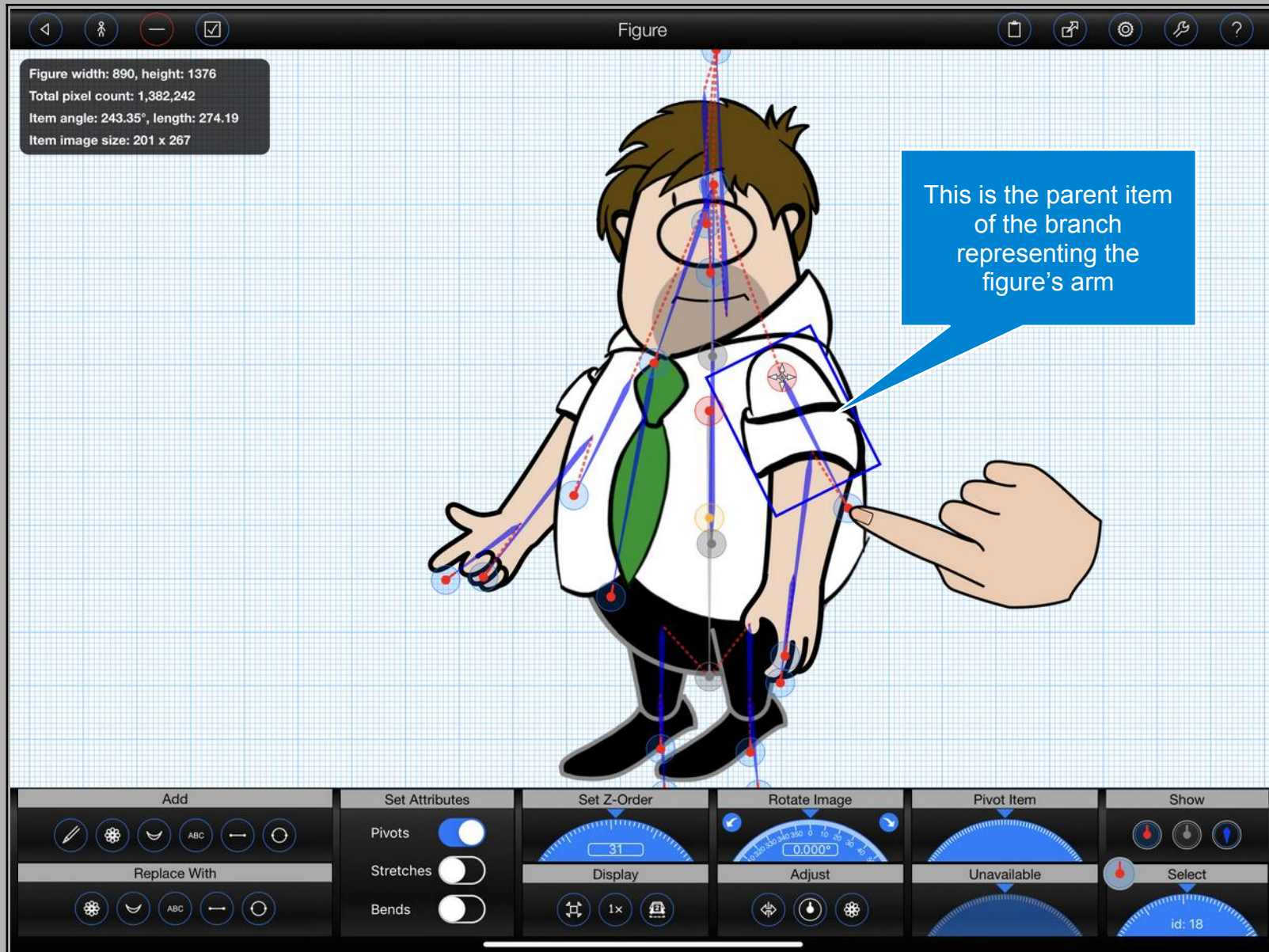


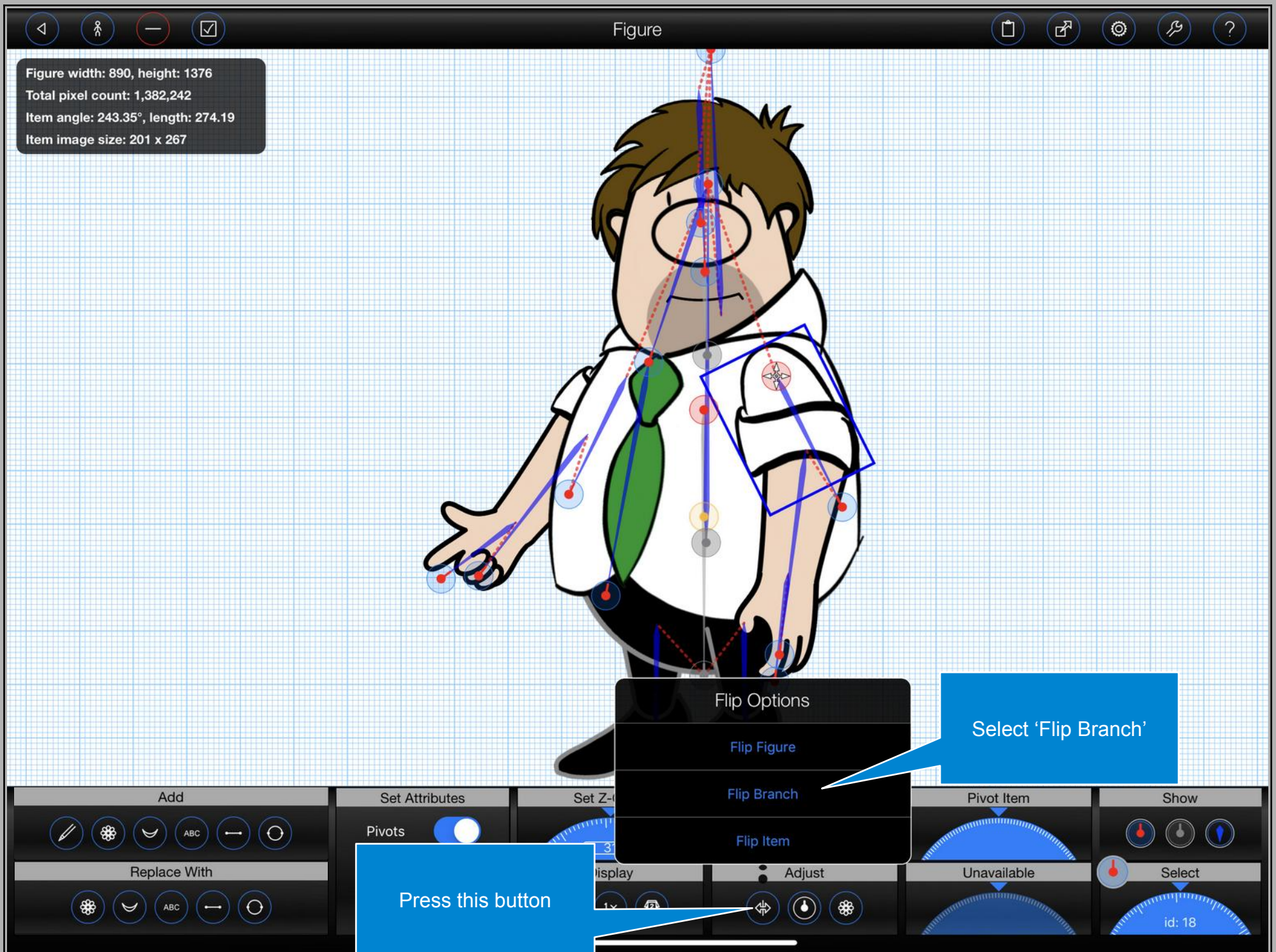
The entire figure will be flipped:



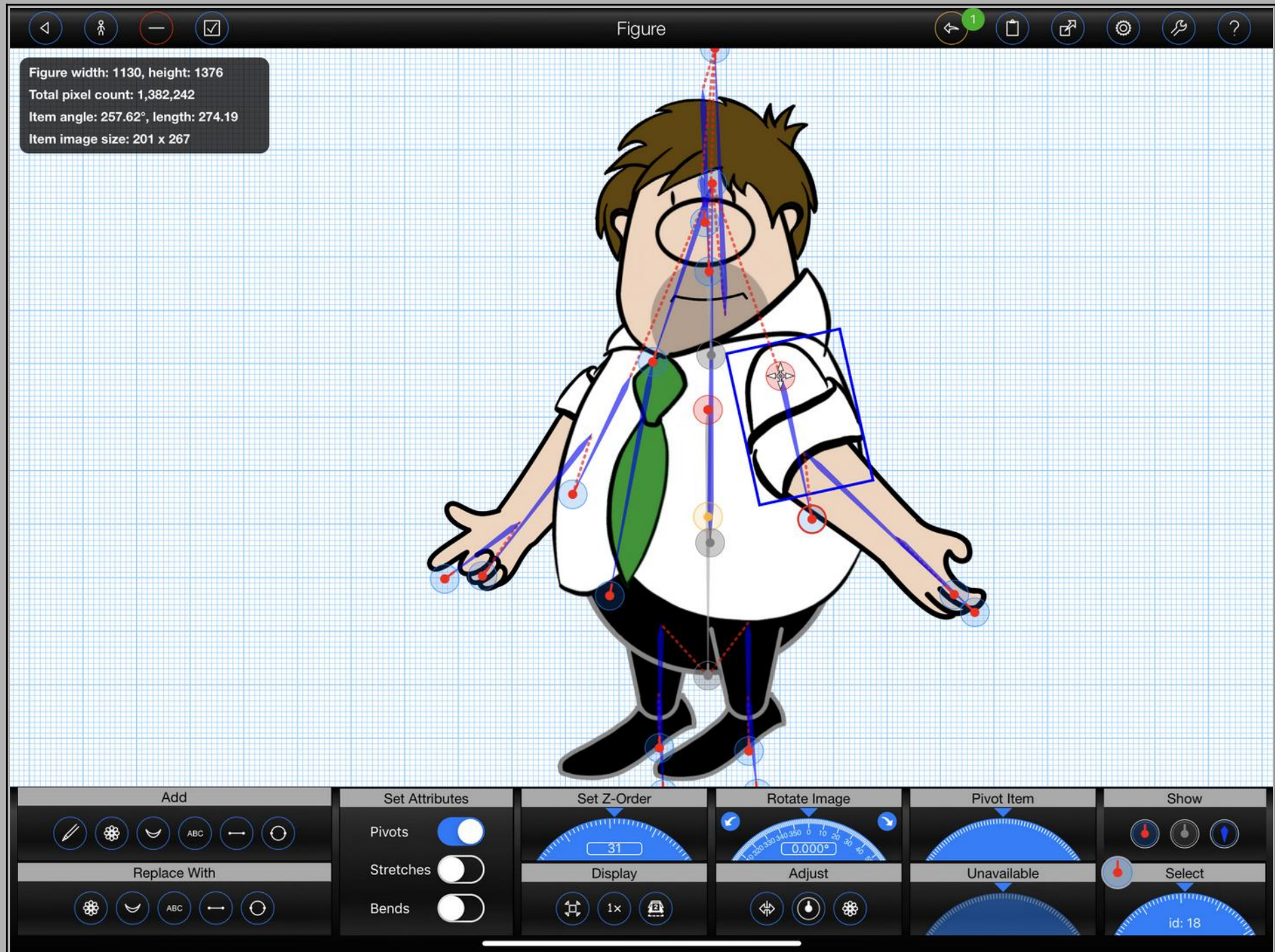
Flipping a Branch

Select the parent item of the branch that you would like to flip by tapping on its handle, open the 'Flip Options' menu and choose 'Flip Branch' as shown below:



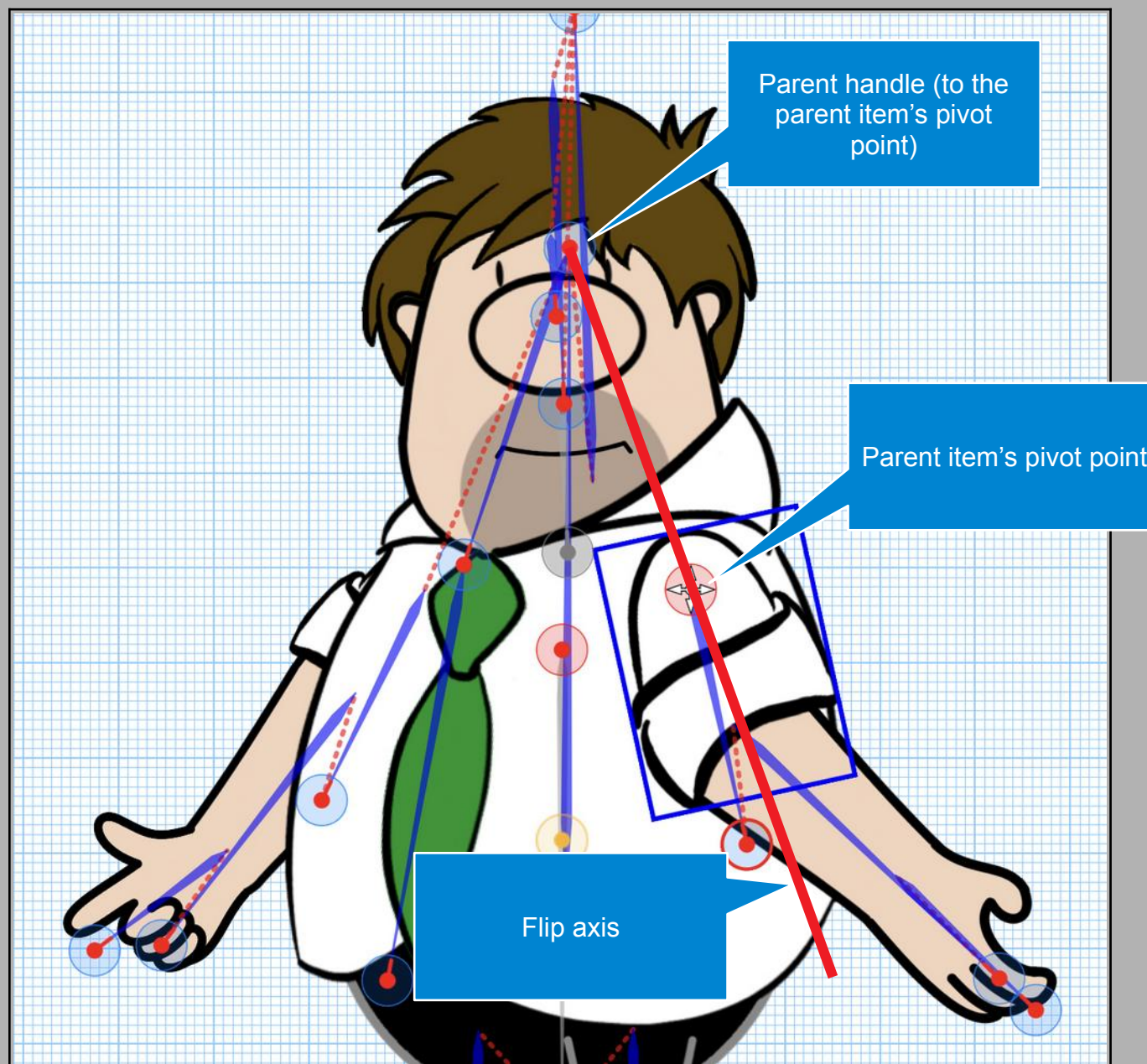


The branch will be flipped:



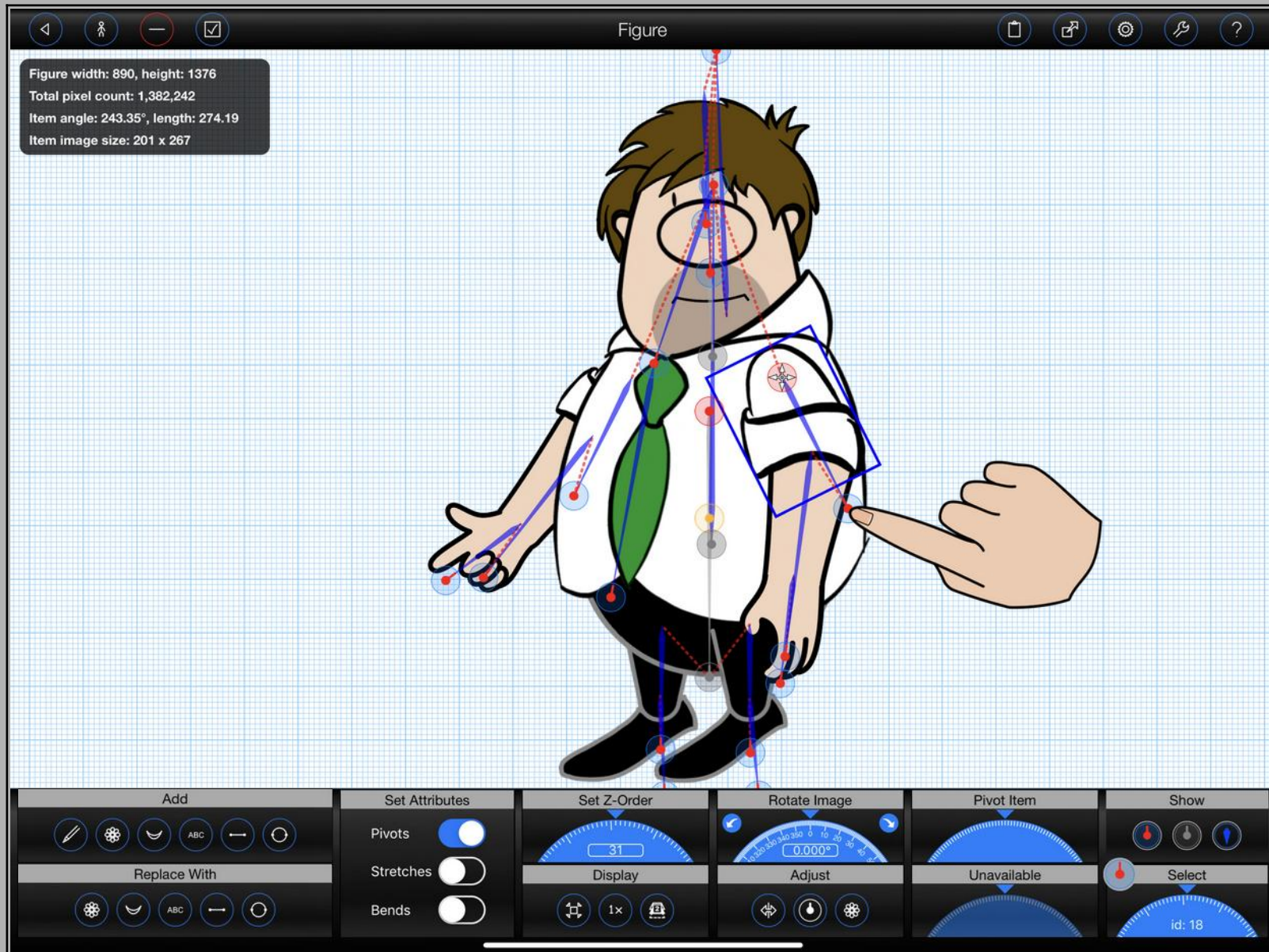
Please note:

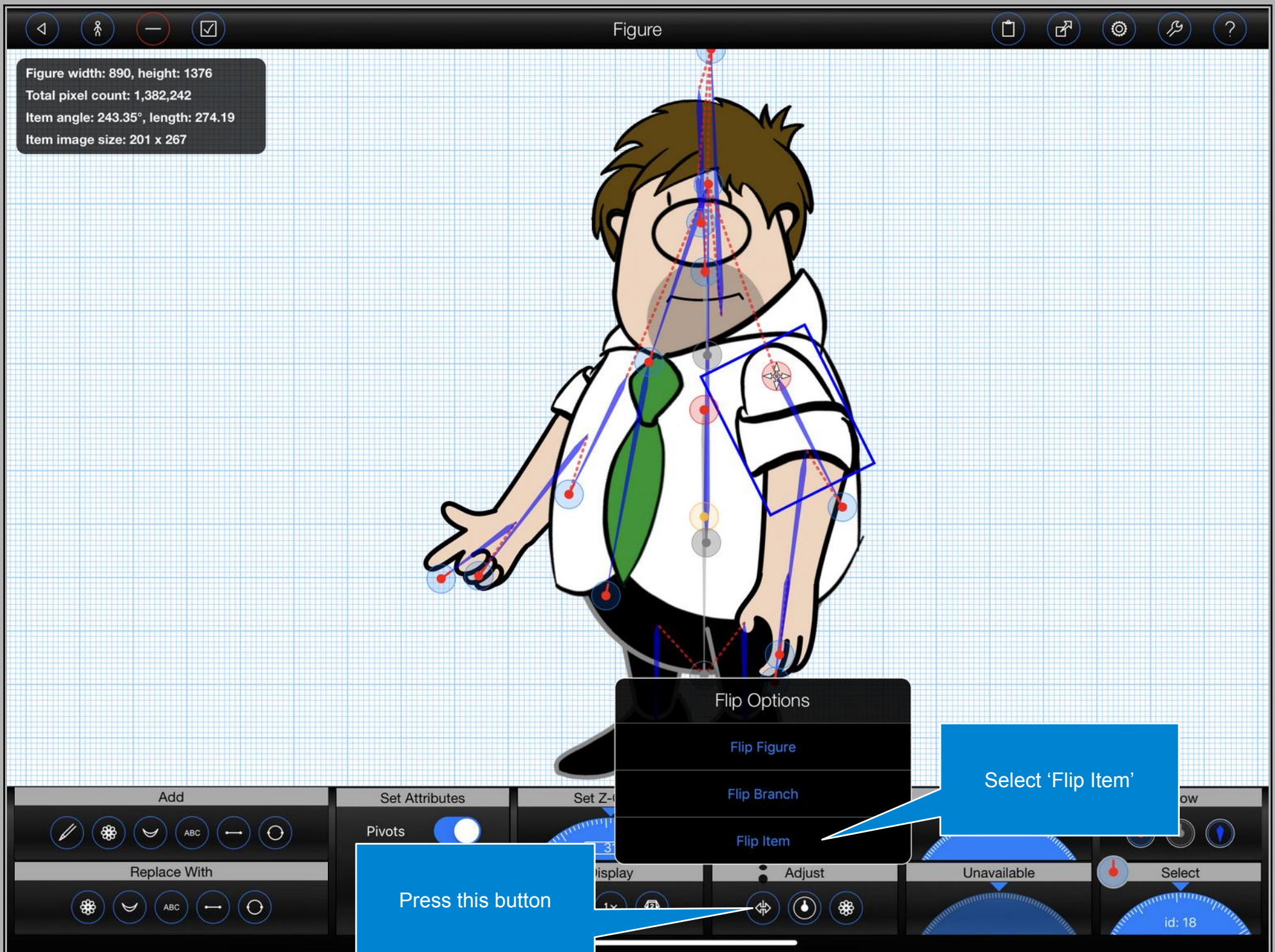
Branches will be flipped about an axis defined by the line joining the parent item's pivot point to its parent handle. Wow, I'm not sure that I understand that sentence myself! Please take a look at the example below:



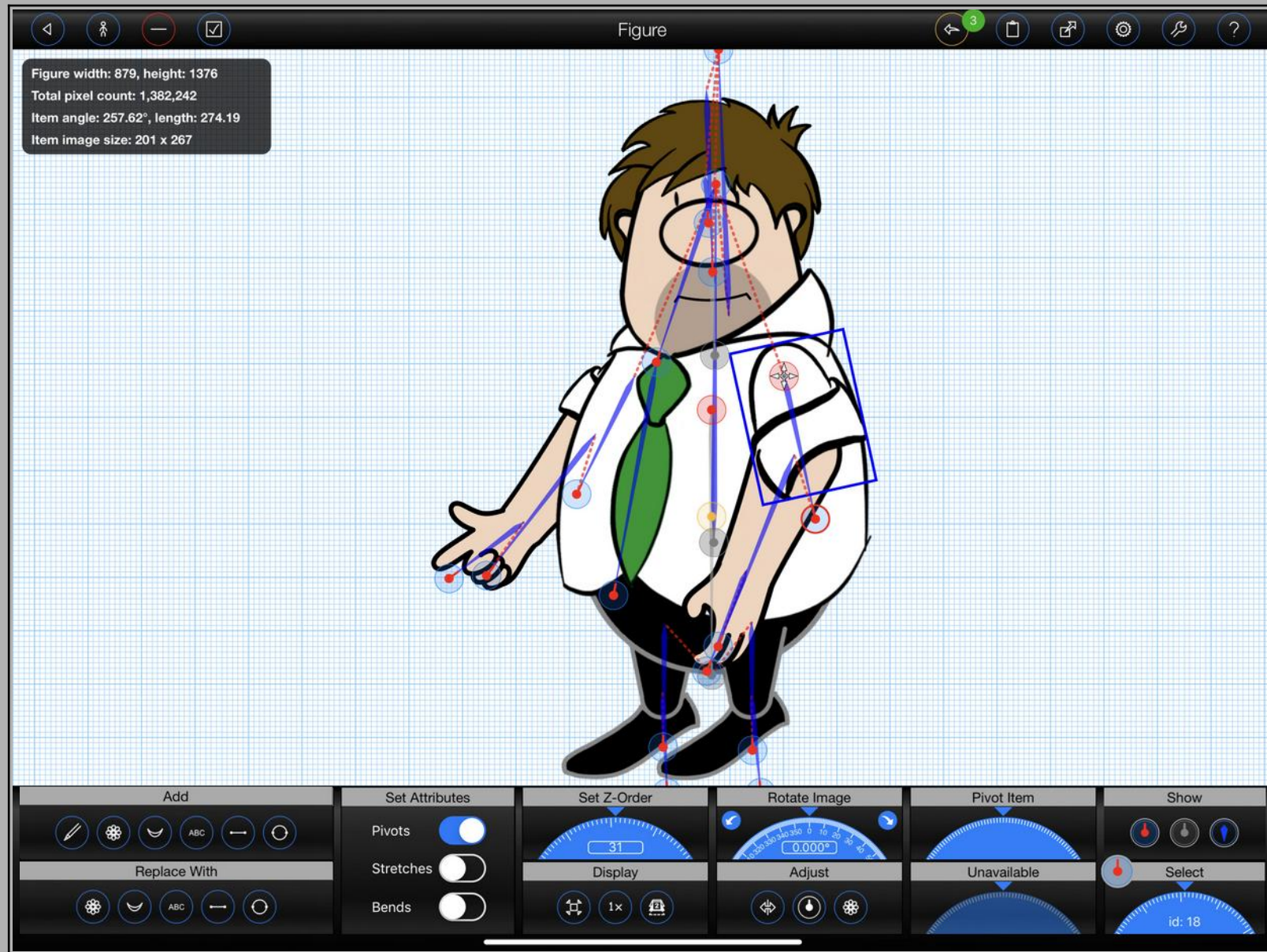
Flipping an Item

Select the item that you would like to flip by tapping on its handle, open the 'Flip Options' menu and choose 'Flip Item' as shown below:





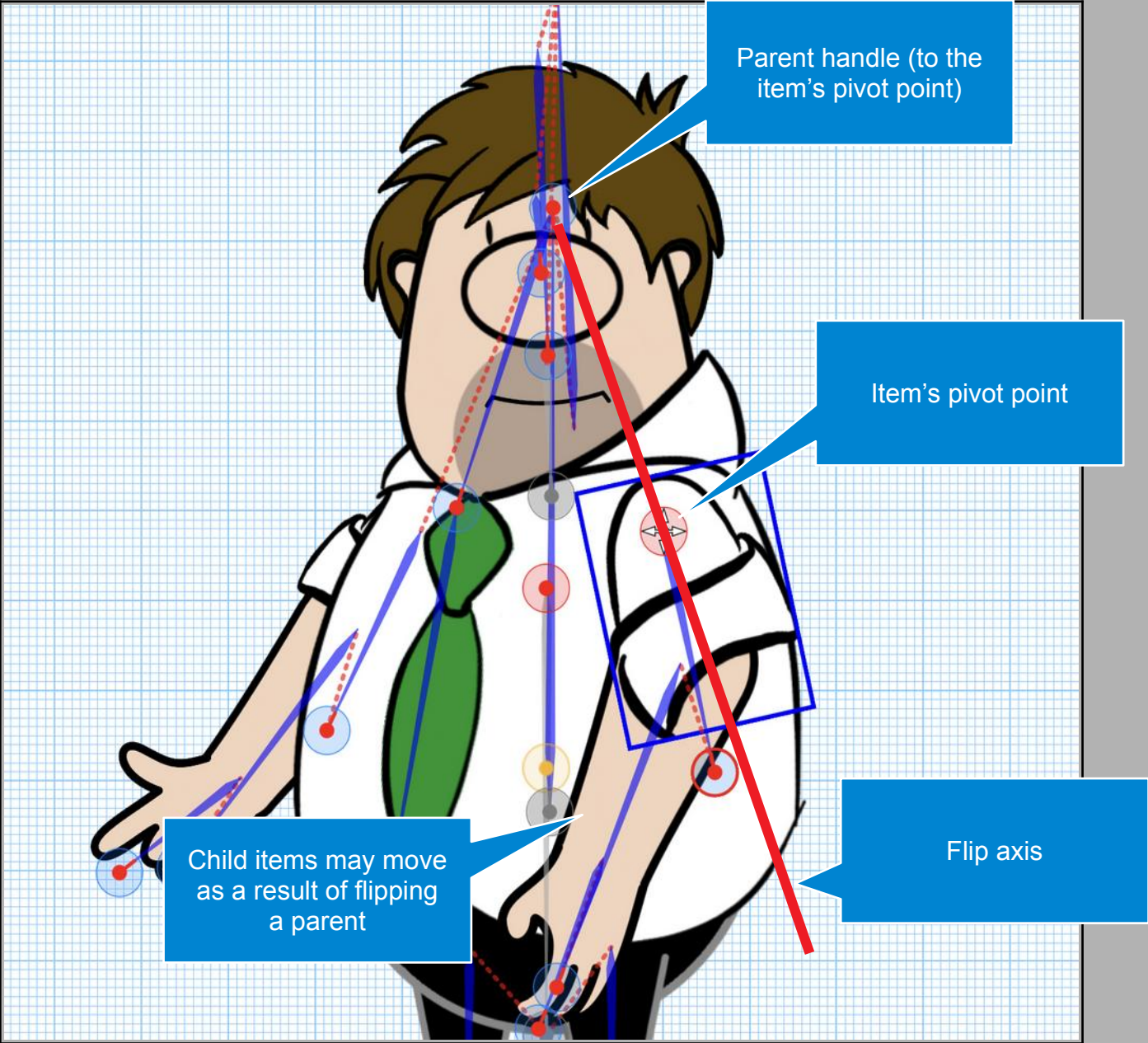
The item will be flipped:



Please note: You can also flip the image within an item by performing an 'Image Adjustment'

Please note:

Items will be flipped about an axis defined by the line joining the item's pivot point to its parent handle. Please take a look at the example below:



Parent handle (to the item's pivot point)

Item's pivot point

Child items may move
as a result of flipping
a parent

Flip axis

Flip axis

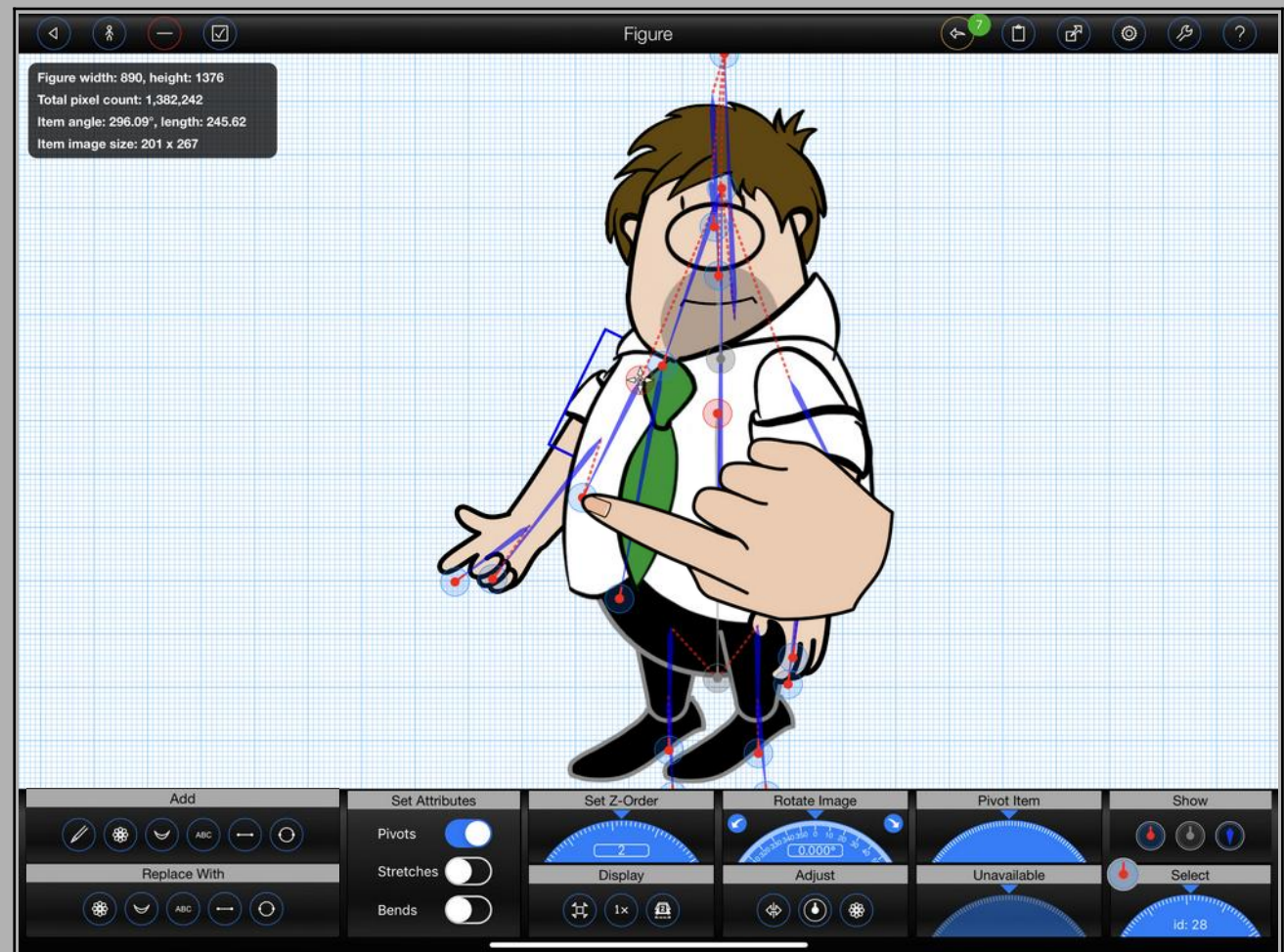
Setting an Item's Z-Order

Each item in a figure exists on its own layer where the layers are stacked on top of one another. The order in which those layers are stacked is known as the Z-Order. An item's Z-Order thus defines whether it appears on top of, or underneath, other items in the figure where:

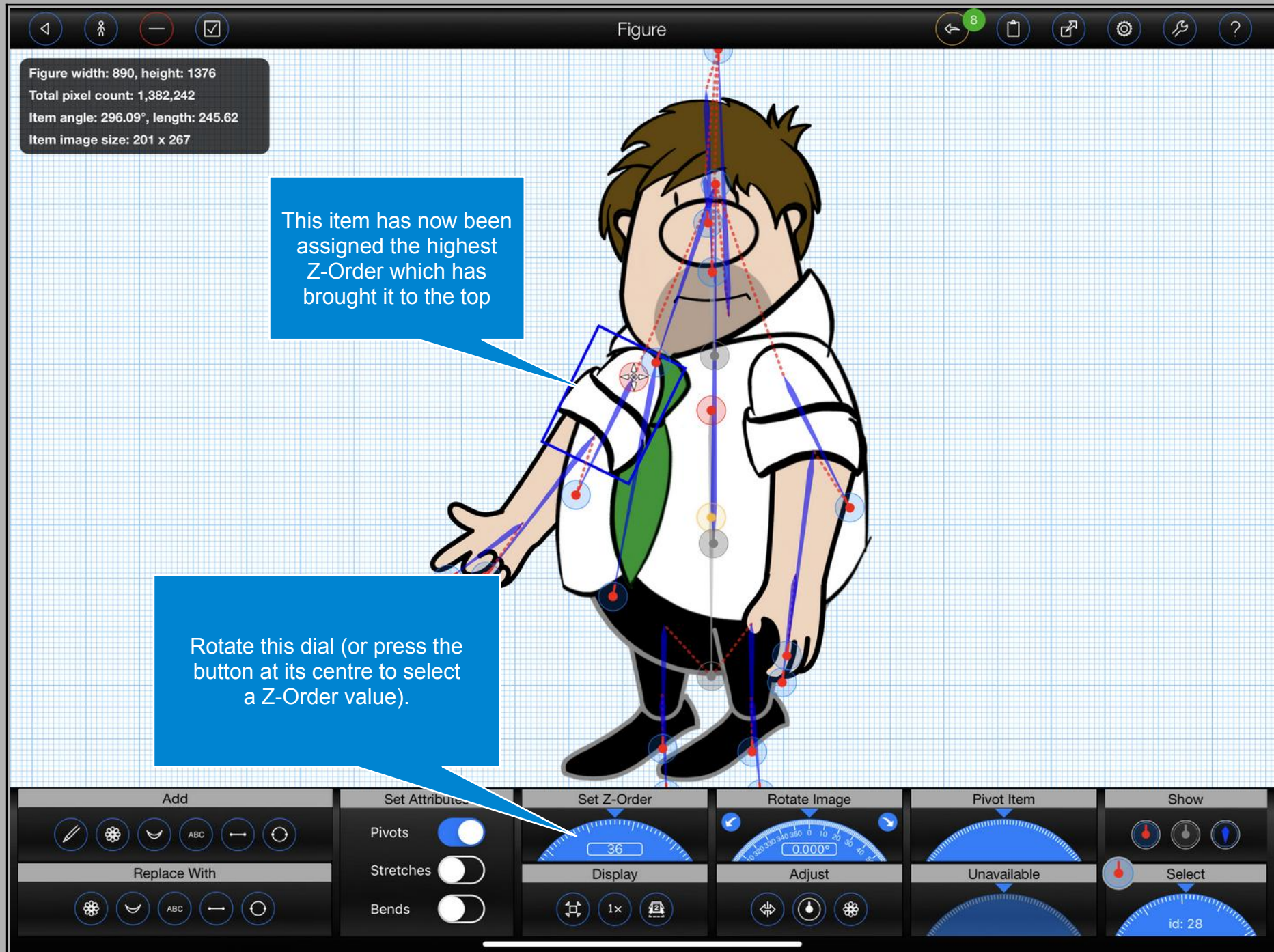
- **The item with the lowest Z-Order will appear beneath all other items**
- **The item with the highest Z-Order will appear on top of all other items**

To set the Z-Order of an item:

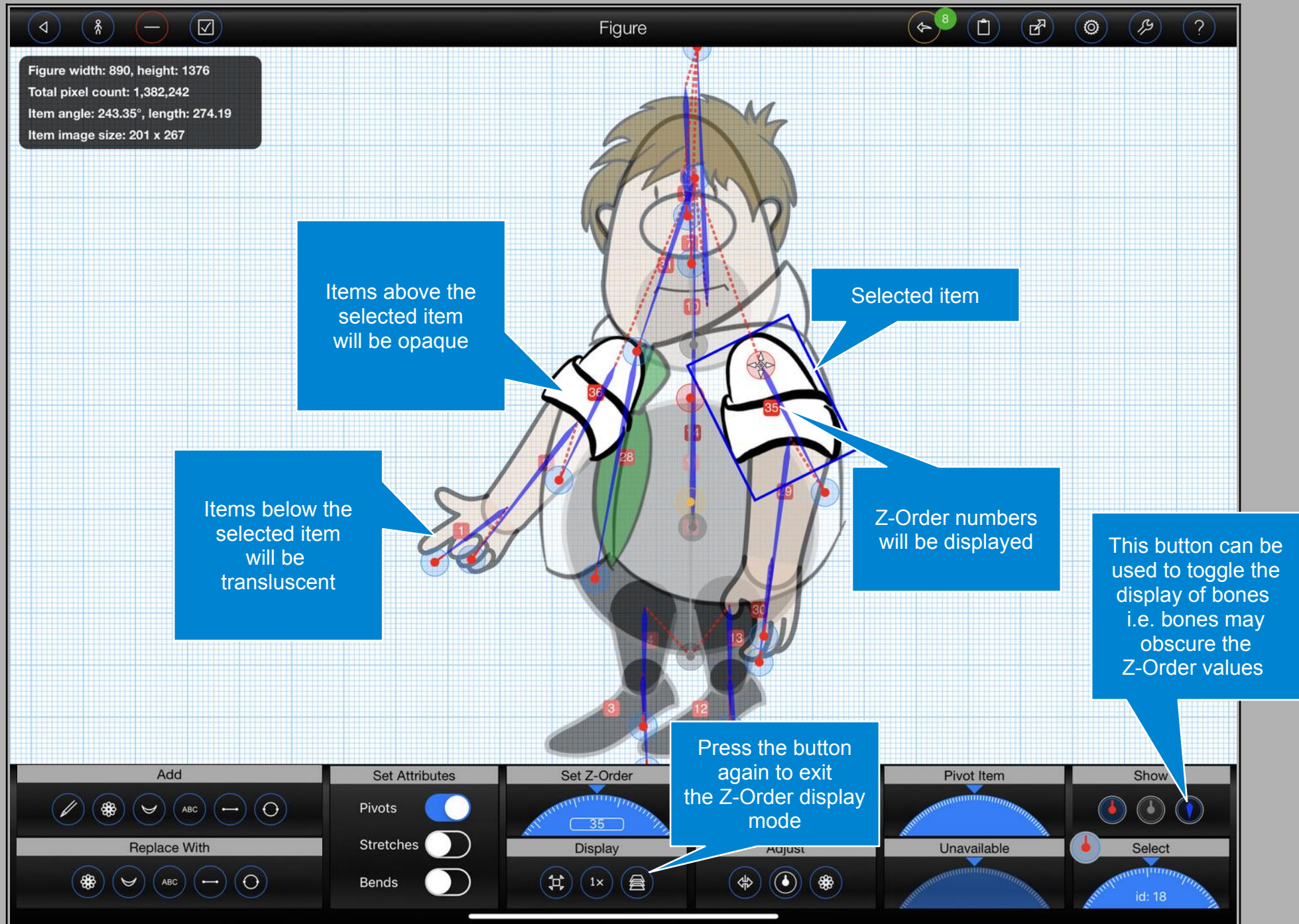
1. Tap on the handle of the item to select it (the selected handle will flash).



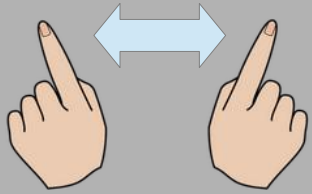
2. Rotate the Z-Order dial at the bottom of the screen as shown below:



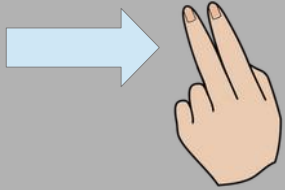
To help visualise where an item resides in the stack of layers, you can press the Z-Order display button as shown below:



Display Options




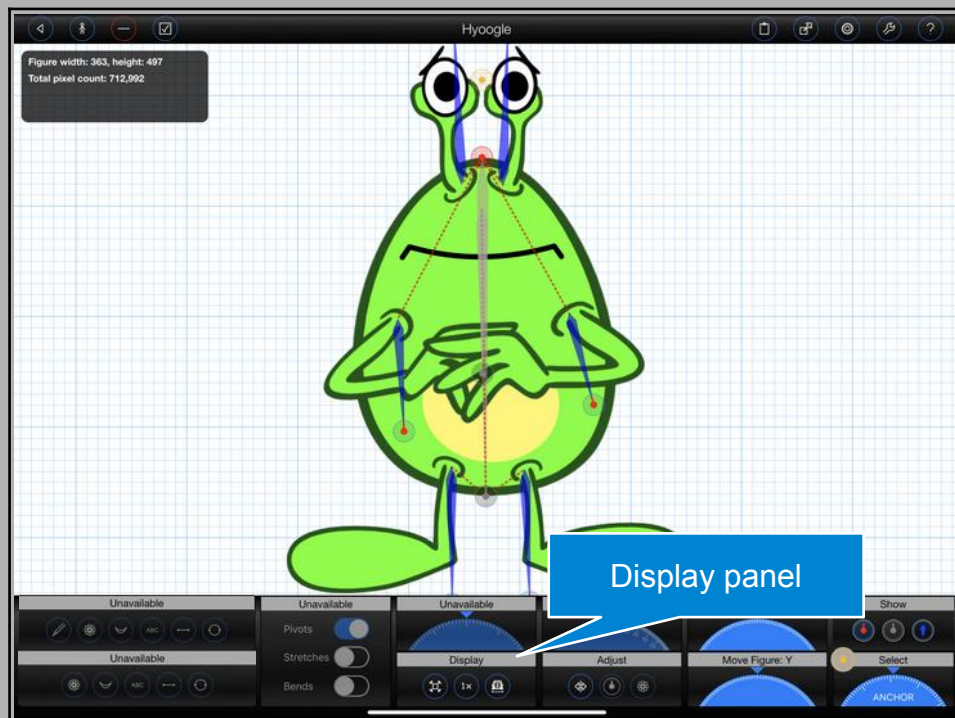
You can use two fingers (pinch-to-zoom) to zoom the display in or out.




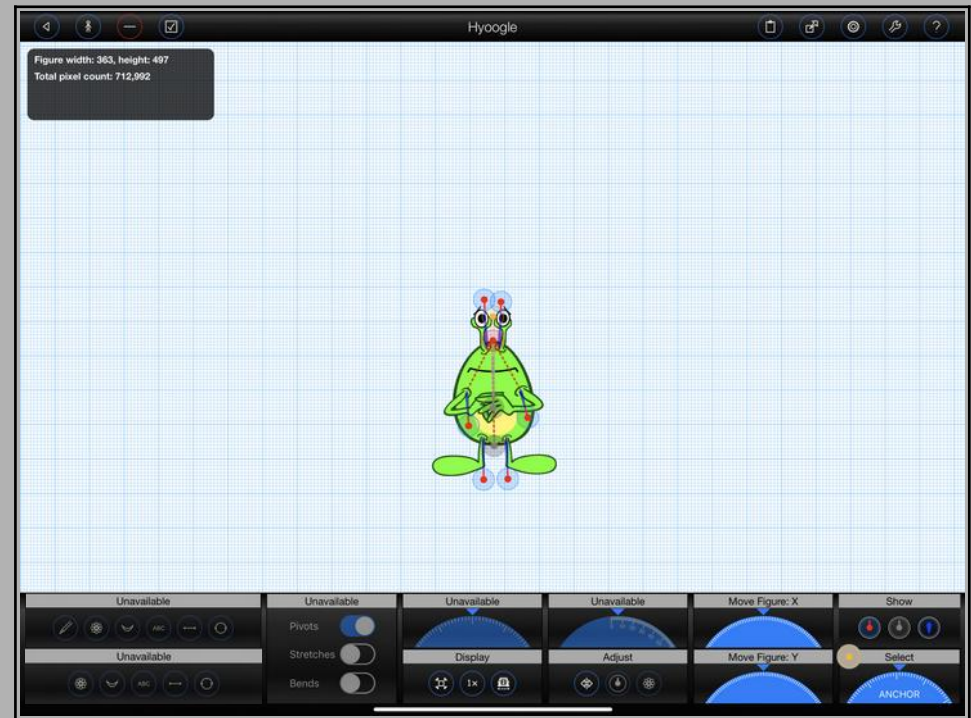
You can drag with two fingers to move the display around.

The 'Display' panel at the bottom of the screen also contains two buttons that may be used to manipulate the display.

Press the  button to centre and fit your figure:



Press the  button to move the figure's anchor point to the centre of the display and show the figure at 1x scale:



Dealing with Overlapping Controls

During the construction of figures, it is possible that one or more of the controls (the anchor point, hub, pivot points or handles) will end up on top of each other making them very difficult to select and move/adjust. In a lot of cases, you can simply zoom in (by spreading two fingers) to enlarge the display and separate overlapping controls; otherwise, you may alternatively use the dials and buttons shown below:

These two dials will change based upon the type of control selected and its mode.

They may generally be used to move items or adjust the position of the controls.

They are also useful for making precise movements/adjustments (vs. dragging controls with your finger).

Tap to change the control's mode

Turn the display of different components on or off

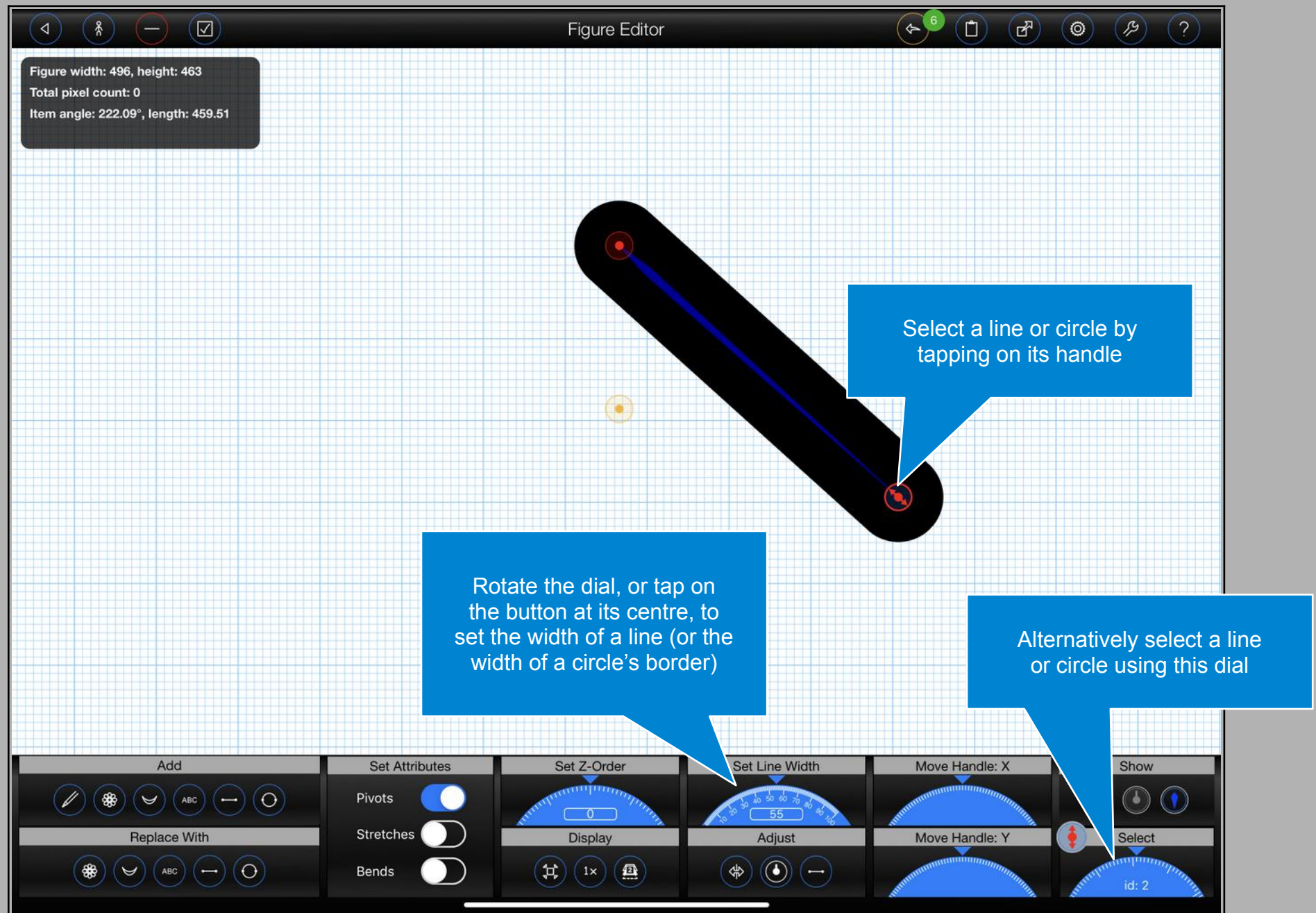
Select a control in your figure

The interface features a bottom toolbar with the following sections:

- Add:** Includes icons for drawing lines, shapes, text, and other elements.
- Replace With:** Includes icons for replacing existing elements with different shapes or text.
- Set Attributes:** Includes toggle switches for Pivots, Stretches, and Bends.
- Set Z-Order:** Includes a dial for setting the Z-order of elements.
- Page:** Includes a dial for setting the page number.
- Move Handle: X** and **Move Handle: Y:** Includes dials for moving handles along the X and Y axes.
- Show:** Includes buttons for showing or hiding different components.
- Select:** Includes a dial for selecting a specific control by ID (e.g., id: 45).

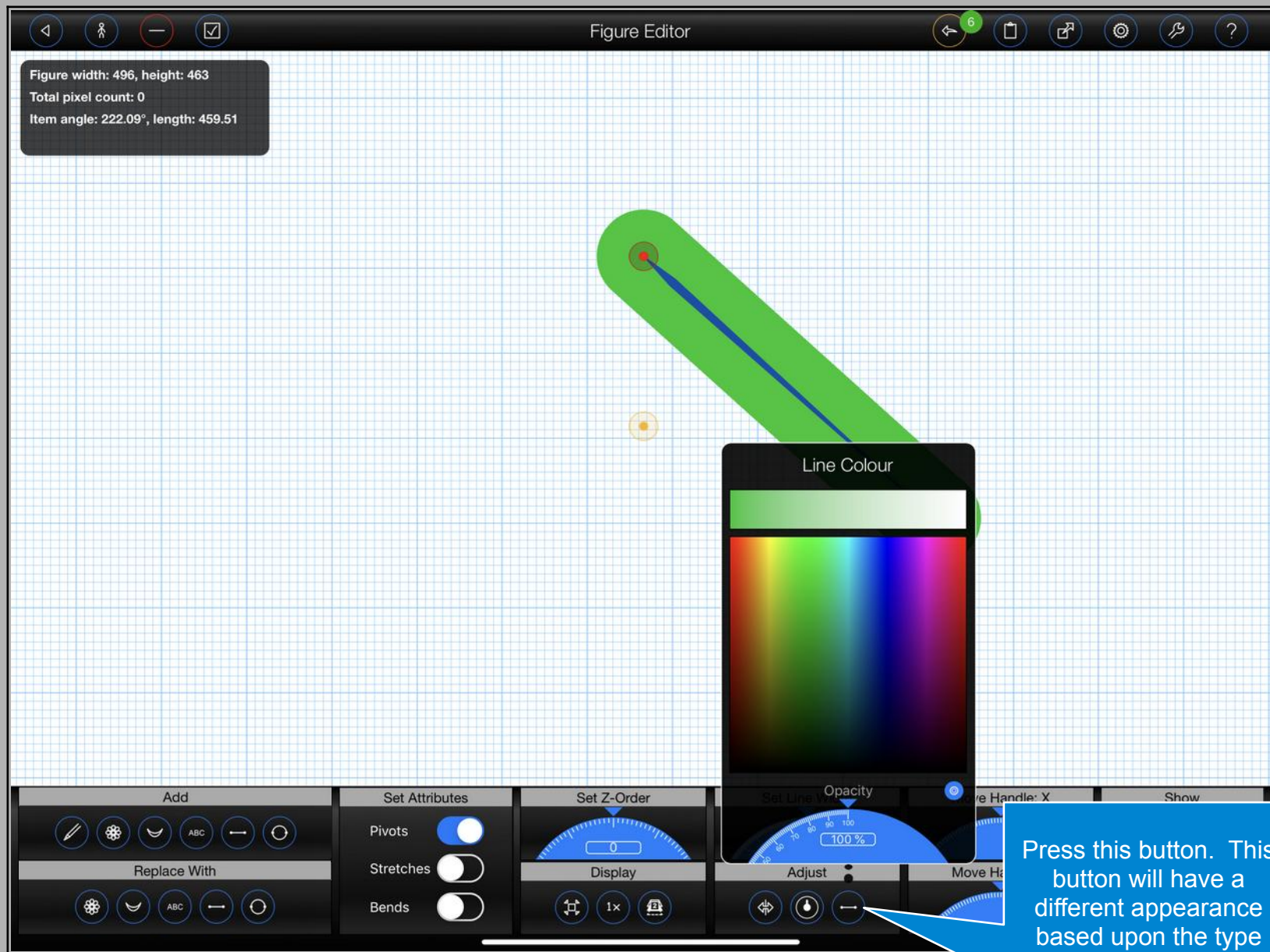
Adjusting Lines and Circles

The width of a line, or the border of a circle, may be adjusted as shown below:



Setting the Colour and/or Opacity of Lines

To set the colour and/or opacity of a line, select the line by tapping on its handle (the handle will start flashing) and then press the button as shown below:



Line Colour

Touch to select a lighter version of the selected colour

Touch to select a colour

Rotate the dial (or press the button at its centre) to set the opacity of the line

Opacity

100 %

Press to select a colour by RGB (red/green/blue) values

Line Colour

Rotate the dials (or press the button at their centre) to select red/green/blue values

Red

0

Green

198

Blue

46

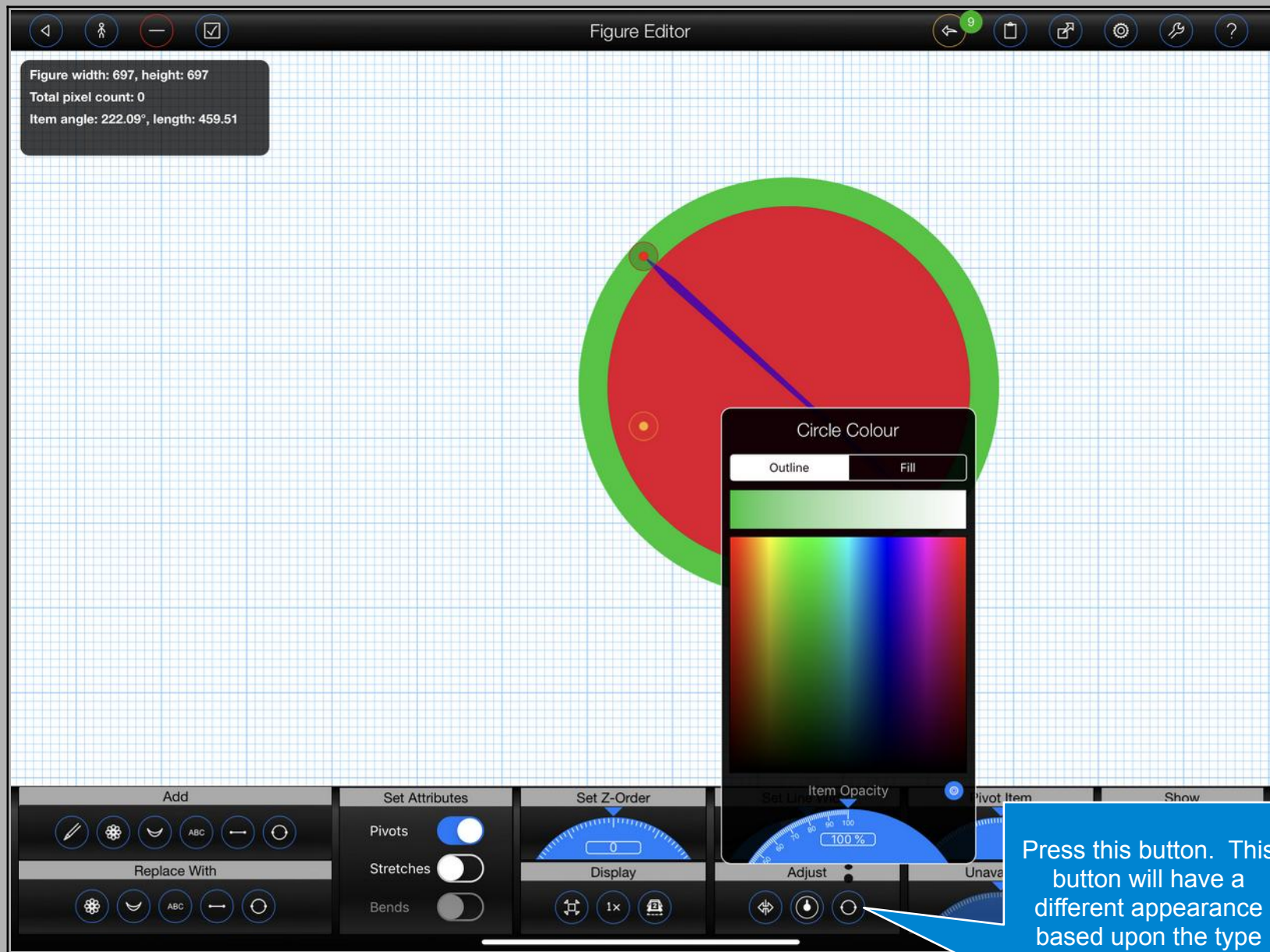
Opacity

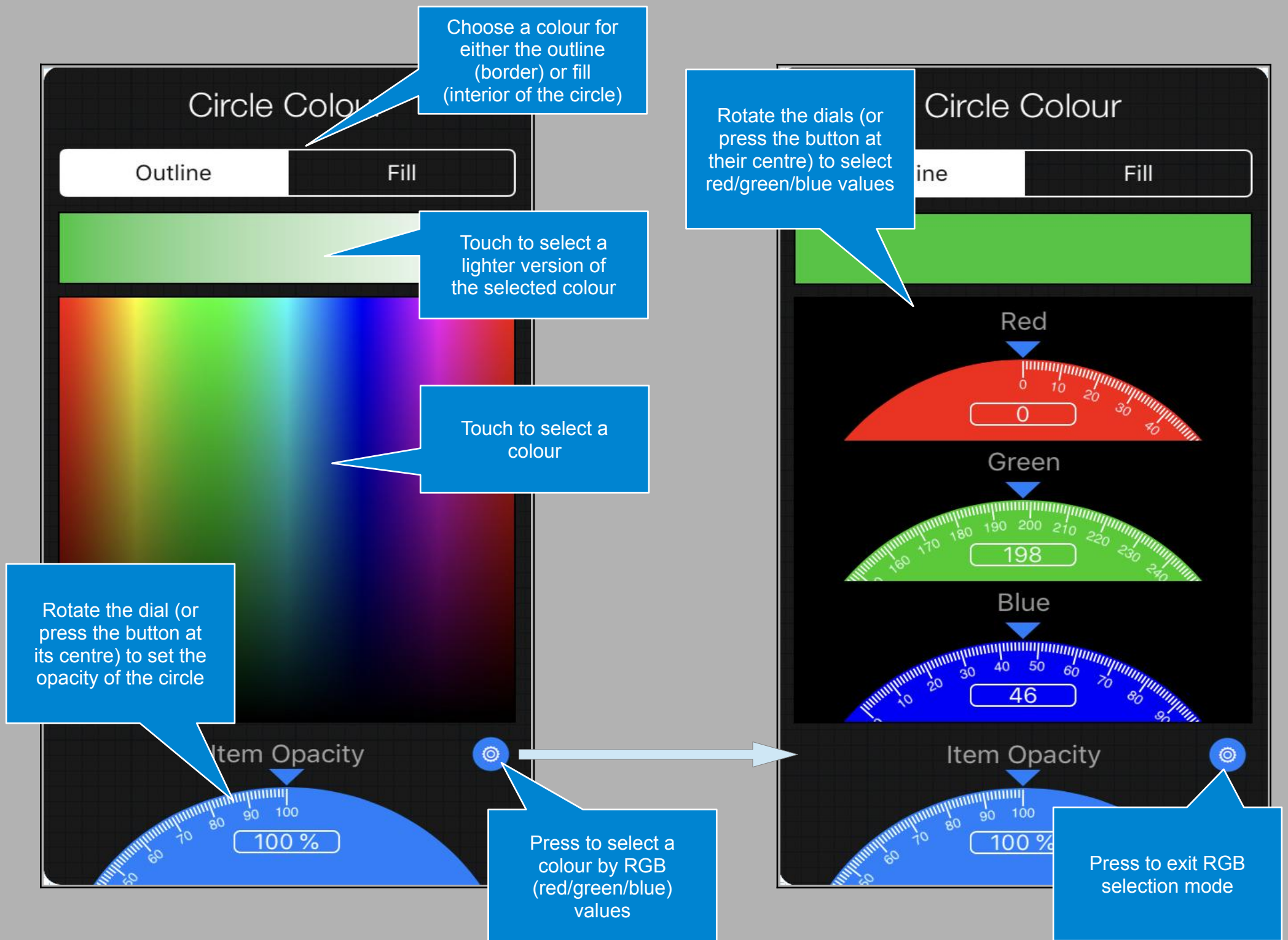
100 %

Press to exit RGB selection mode

Setting the Colour and/or Opacity of Circles

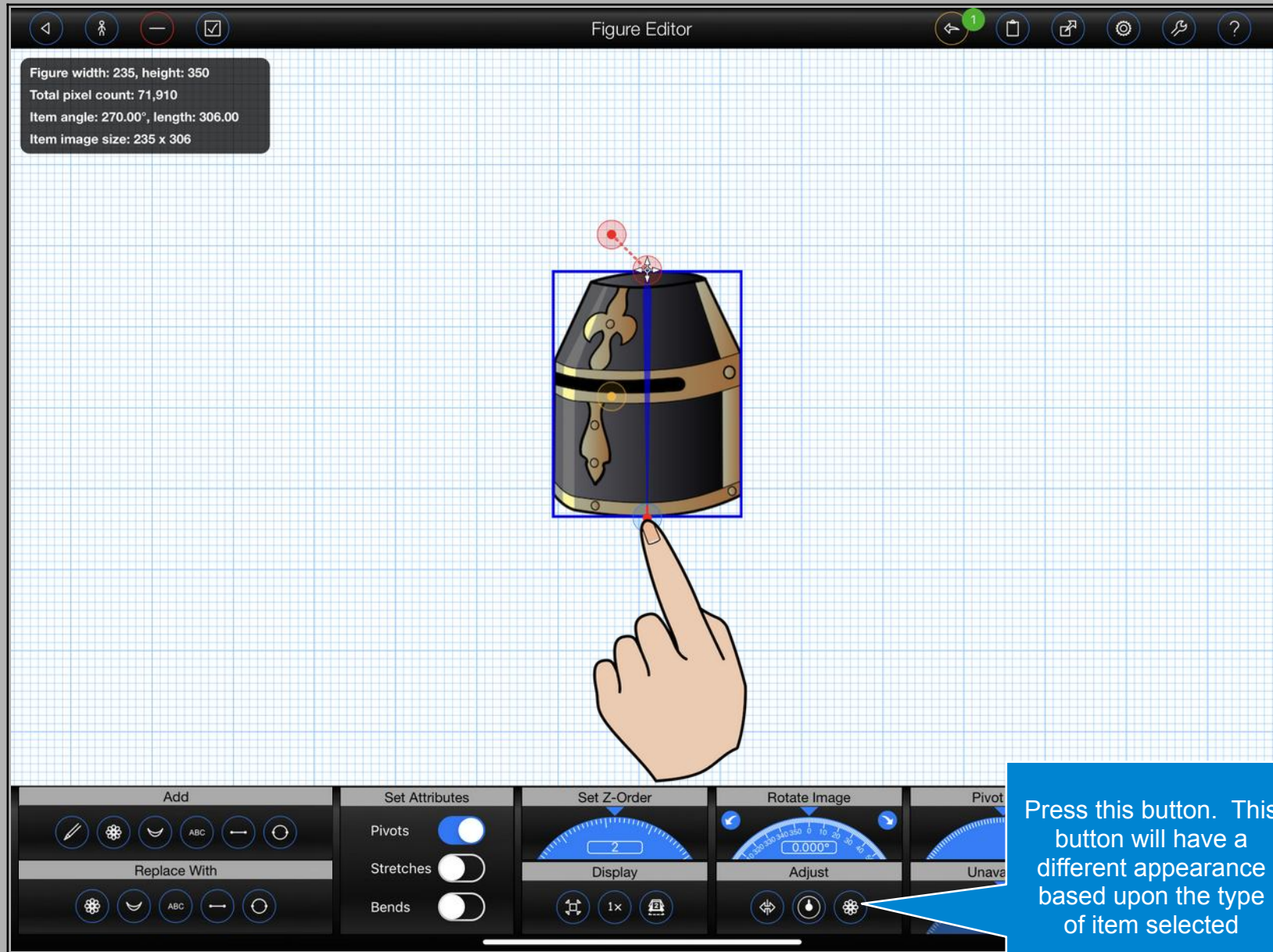
To set the colour and/or opacity of a circle, select the circle by tapping on its handle (the handle will start flashing) and then press the button as shown below:



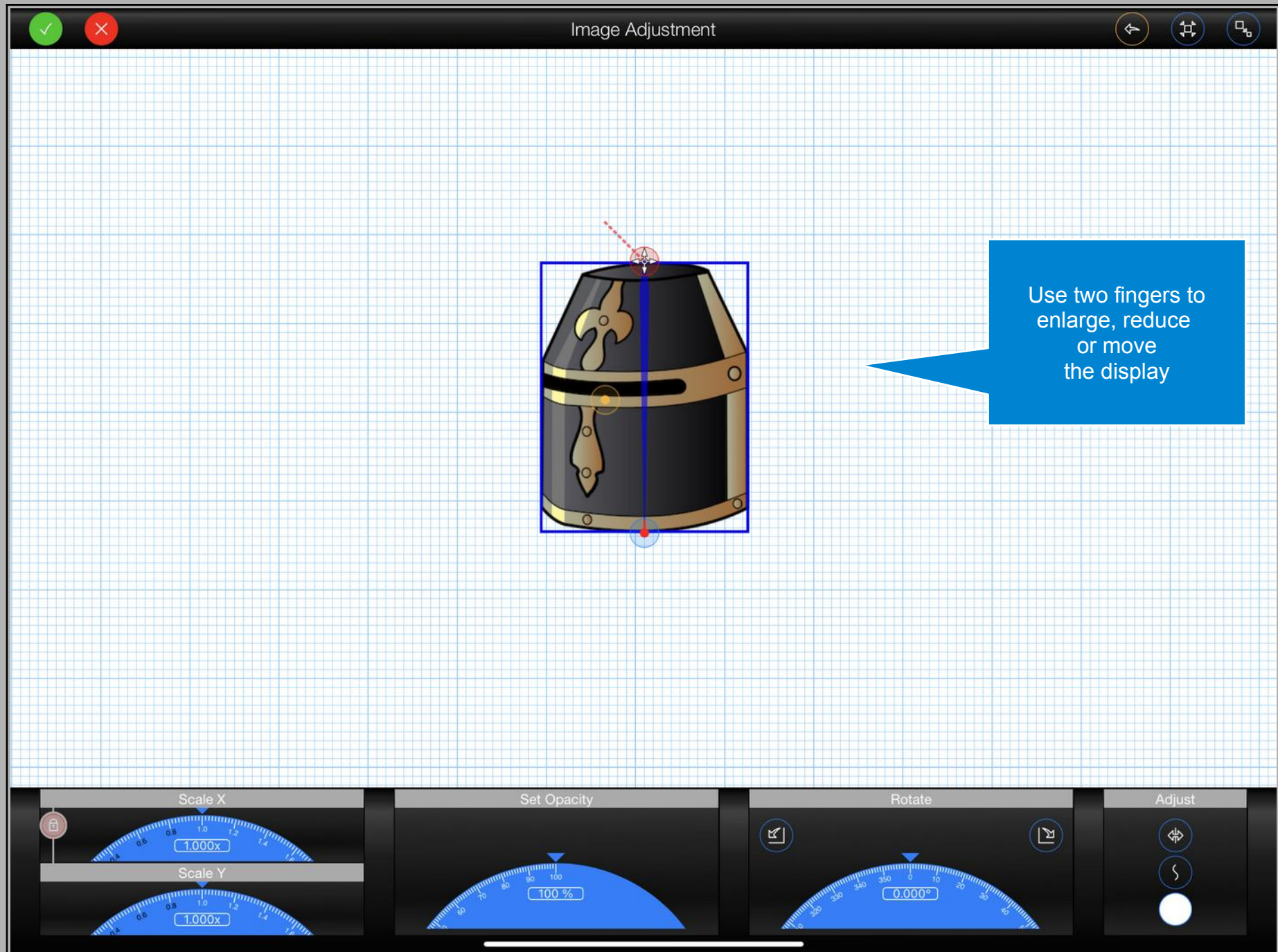


Adjusting an Image

The images within image/mouth/text items may be adjusted in a variety of ways. Select the image/mouth/text item that you would like to adjust the image of by tapping on its handle (the handle will flash) and then press the button at the bottom of the screen as shown:

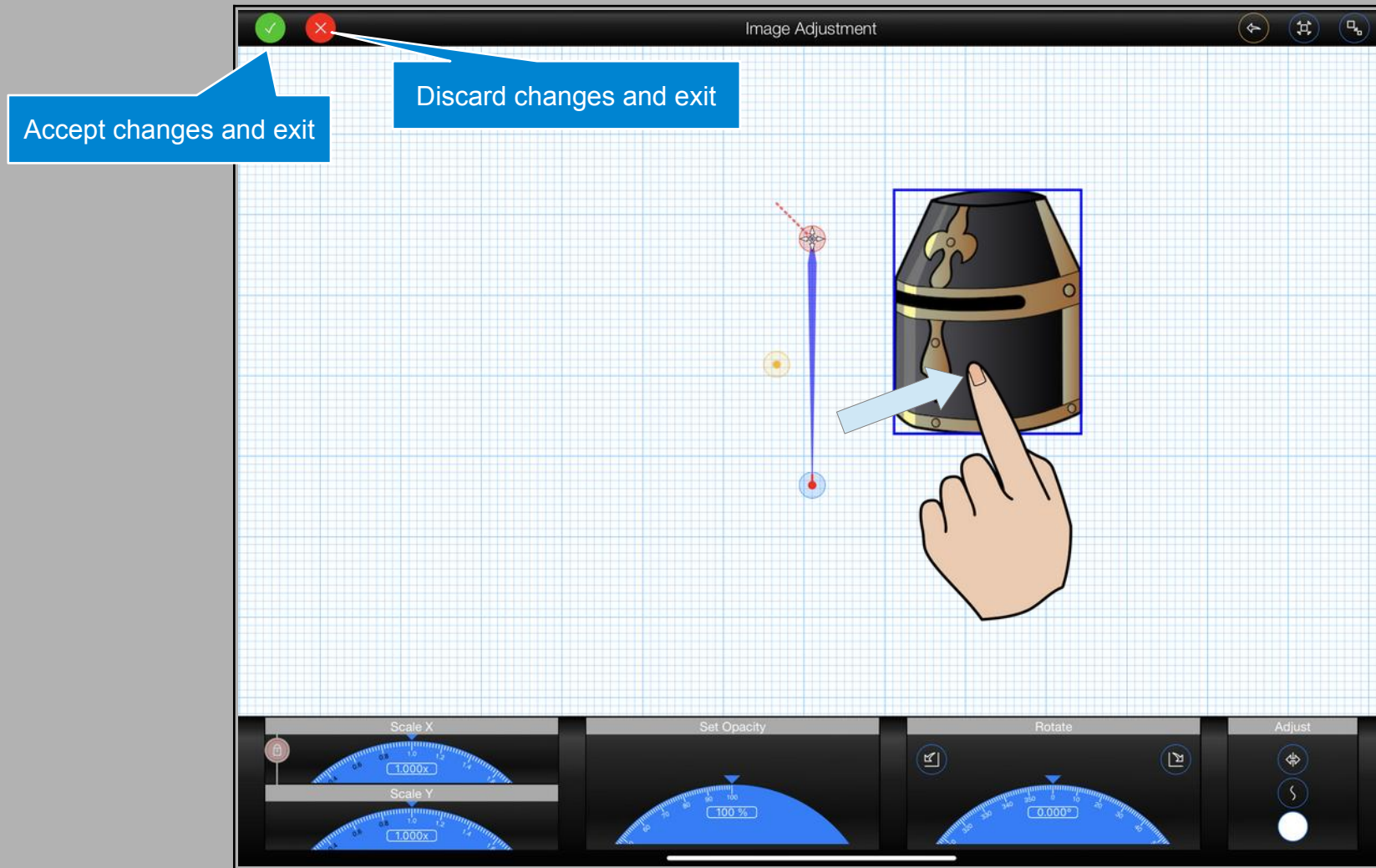


The 'Image Adjustment' screen:



Moving an Image

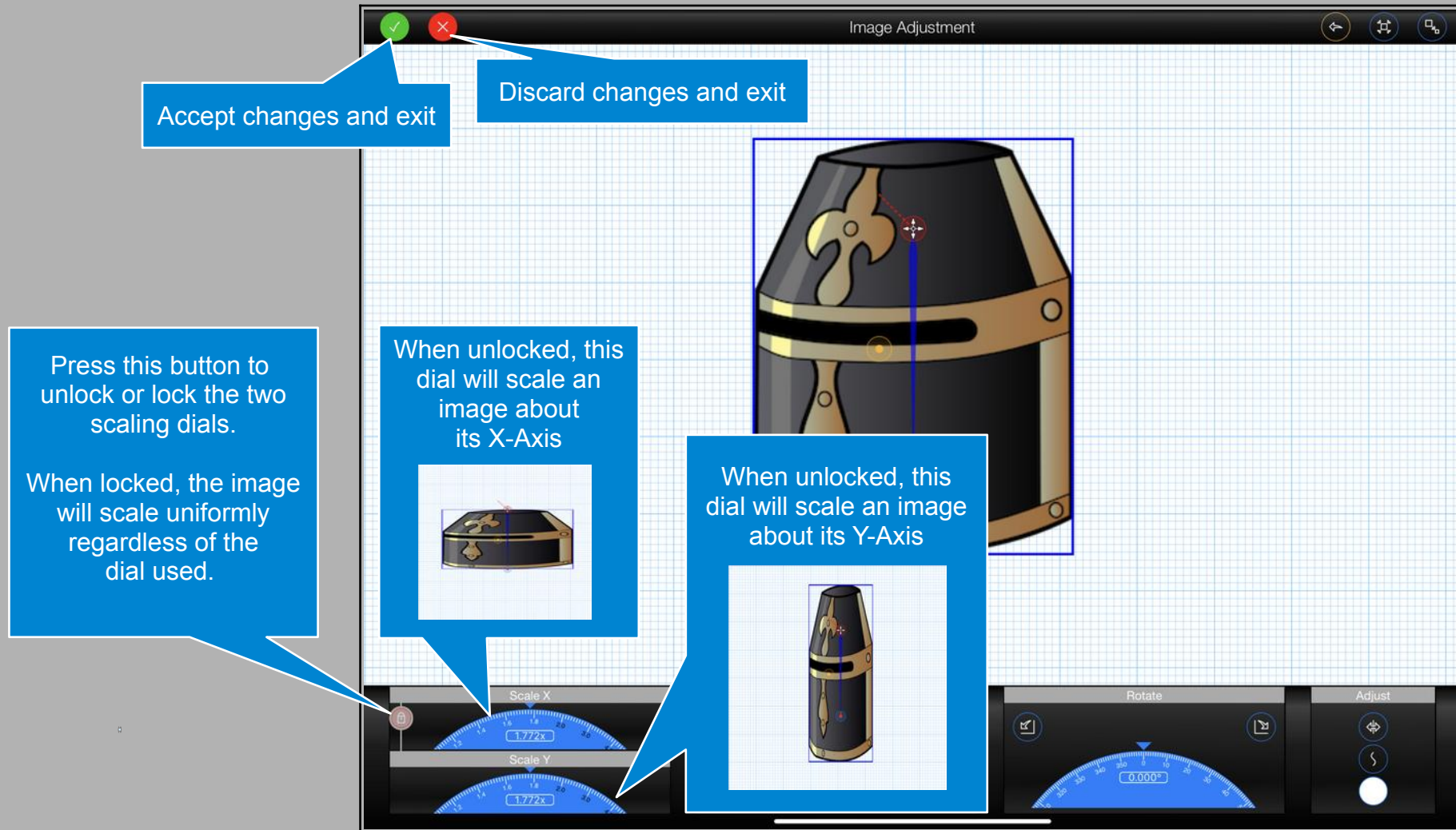
Use one finger to drag the selected image around:



Please note: Image item handles and pivot points will always remain in their original positions.

Scaling an Image

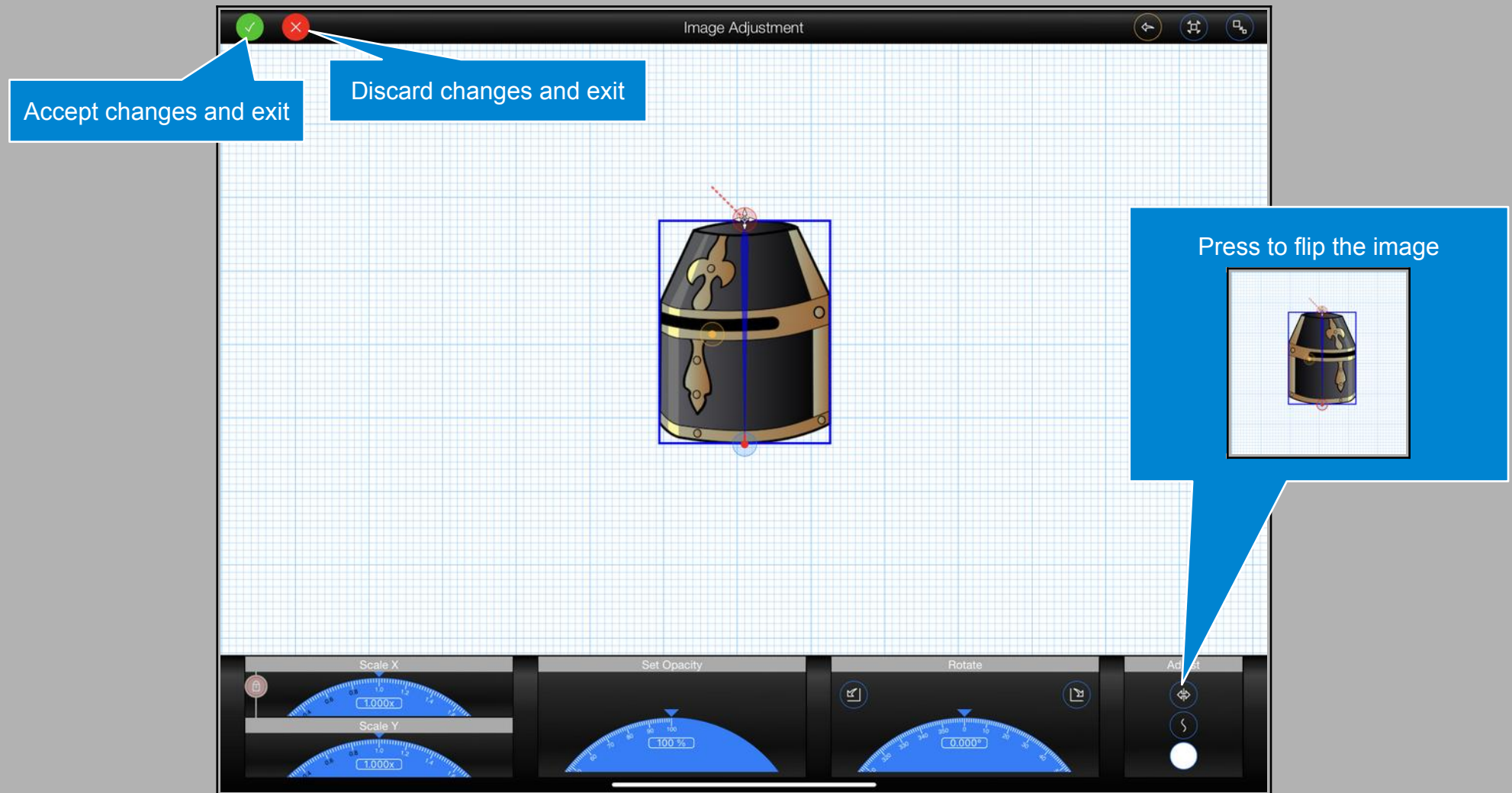
Use the 'Scale X' and 'Scale Y' dials (bottom-left corner) to shrink or enlarge an image. By default, the two dials will be 'locked' such that scaling an image about its X-Axis also scales it about its the Y-Axis (and vice-versa). To scale each axis independently, tap on the 'Lock' button as shown below:



Please note: Image item handles will always remain in their original positions.




Flipping an Image

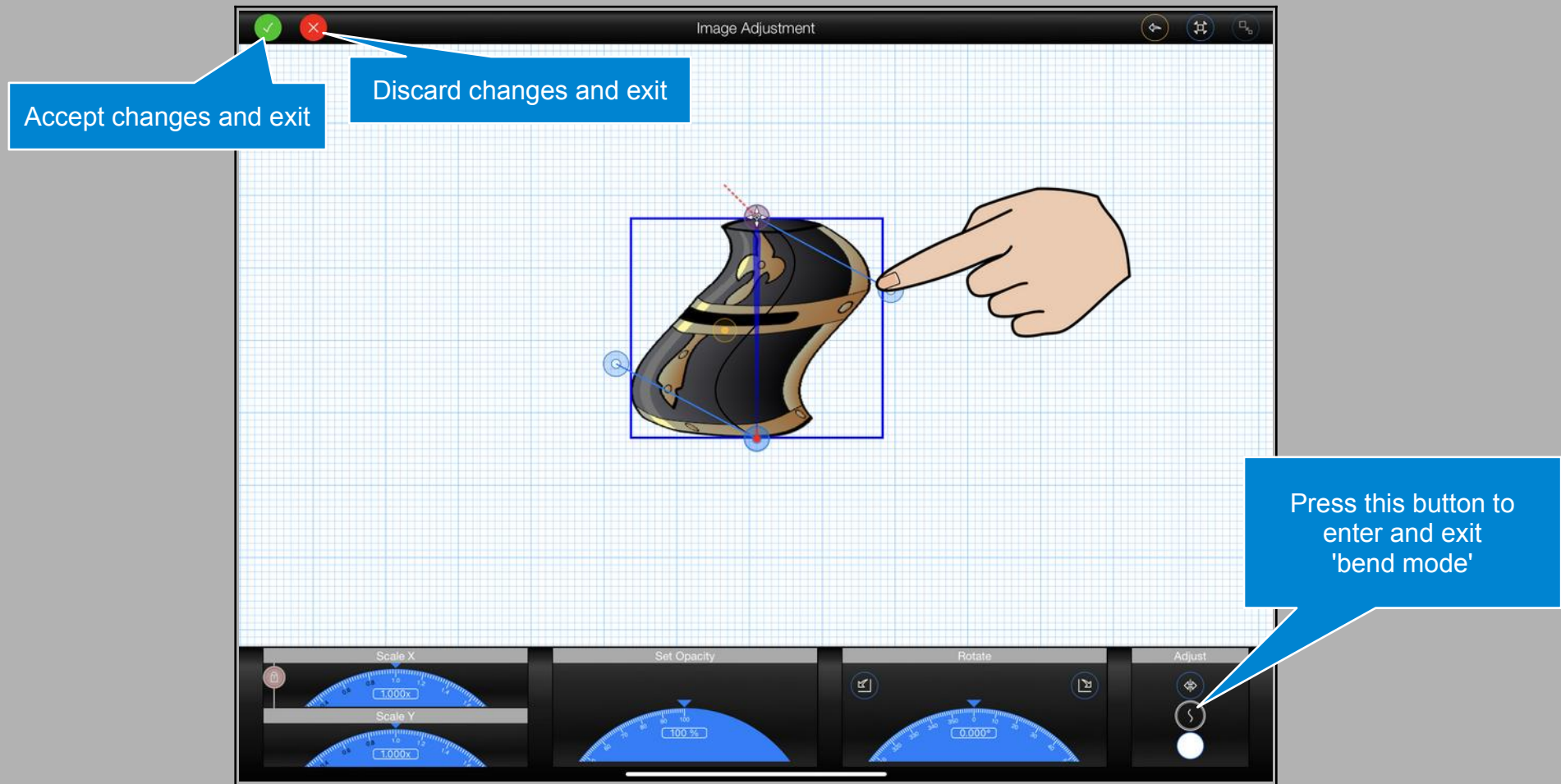
Press the  button to flip the image:



Please note: Images are flipped about a central axis parallel to the angle of the selected item (where the angle of the selected item is defined by the line joining the item's handle to its pivot point).

Bending an Image

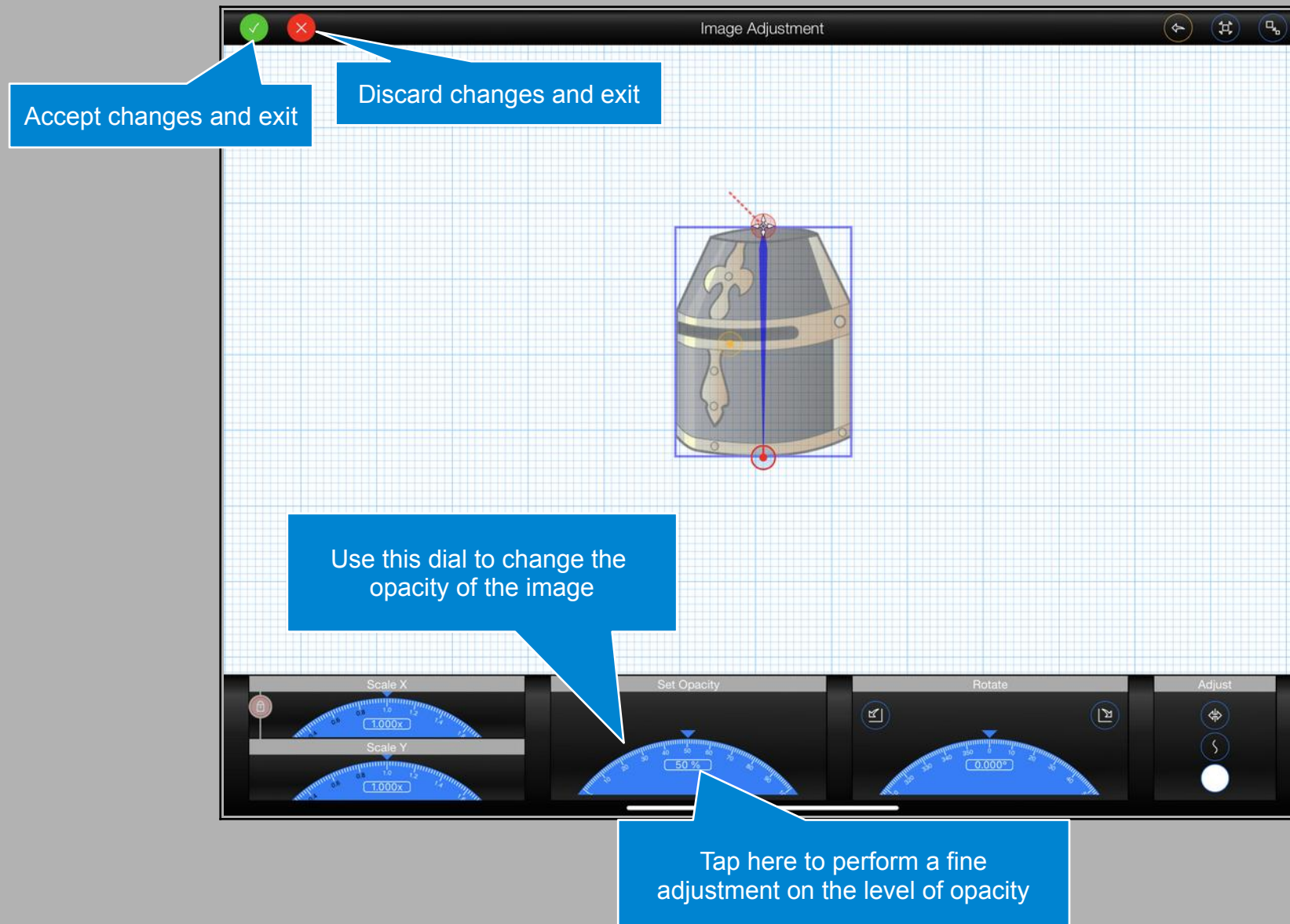
1. Press the  button to enter 'bend mode'. Blue bend handles, , will be displayed.
2. Drag the bend handles to bend the image.
3. Press the  button again to exit 'bend mode'.



Please note: You cannot bend an already 'bendable' item via the 'Image Adjustment' screen.

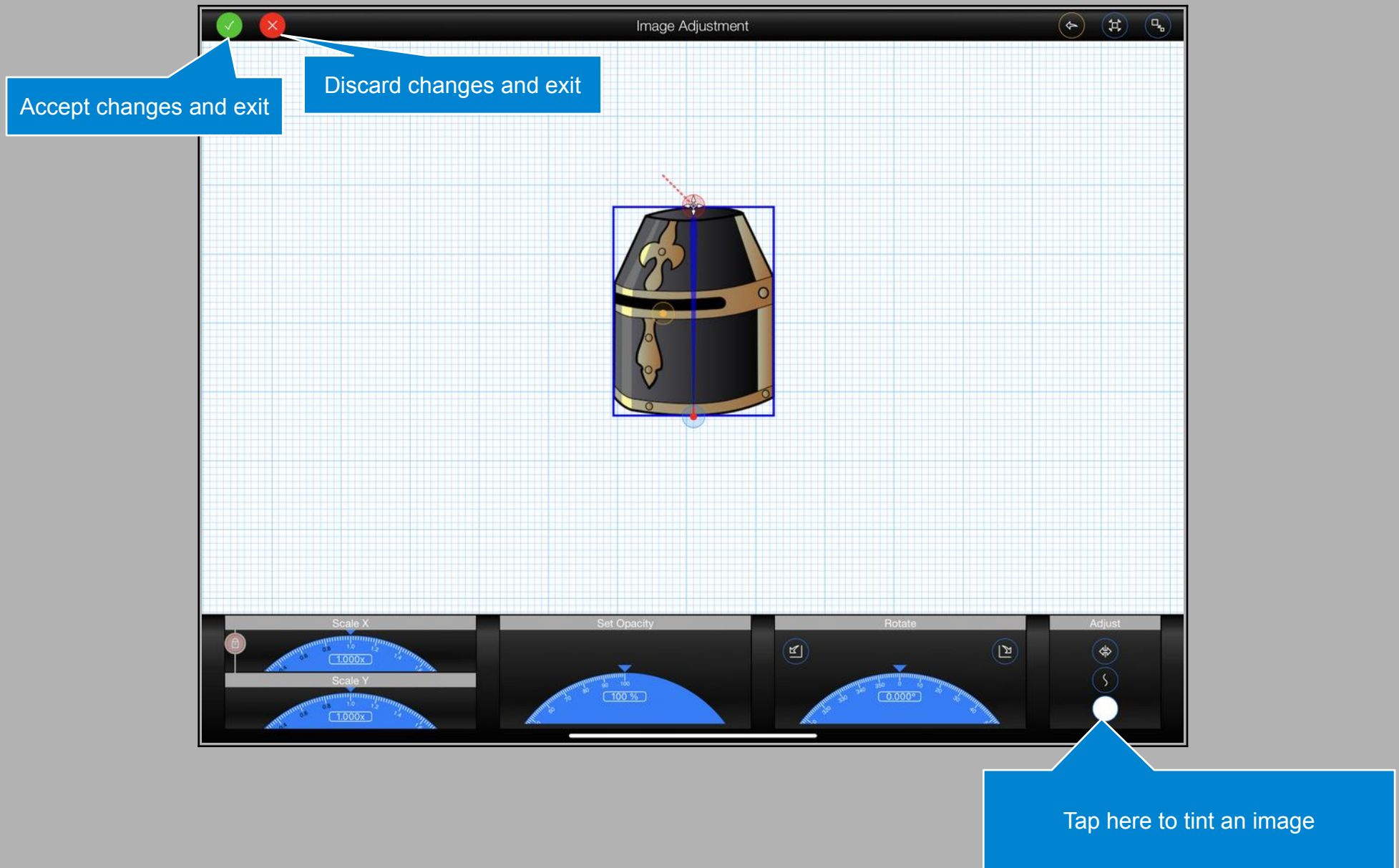
Changing the Opacity of an Image

Use the 'Opacity' dial to change the opacity of an image:



Tinting an Image

Press the  button to tint an image:



Animation Pro will display an 'Item Tint' popover:

The screenshot shows the 'Image Adjustment' window in Animation Pro. In the center, a green, ornate object is displayed on a blue grid. A blue square selection box is around the object, with a red dashed line and a red dot at the top and a blue dot at the bottom. To the right, the 'Item Tint' popover is open, showing a color gradient bar, a hand icon pointing to it, and a list of blend modes. Below the popover, there are three circular dials for 'Scale X', 'Scale Y', and 'Set Opacity', each with a '1.000x' or '100 %' value. A 'Rotate' dial is also visible. The bottom of the screen shows a 'Strength' dial set to '100 %' and a green button.

Image Adjustment

Item Tint

Touch any point on the colour gradient to choose a lighter version of the currently selected tint colour

Slide your finger around the colour swatch to select a tint colour

Tap here to toggle between the colour swatch and RGB (red, green and blue) dials

Select a blend mode from this list - see next page for blend mode details.

Blend Mode

None (OFF)

Multiply

Normal

Strength

100 %

Rotate

Scale X

1.000x

Scale Y

1.000x

Set Opacity

100 %

0.000°

Rotate

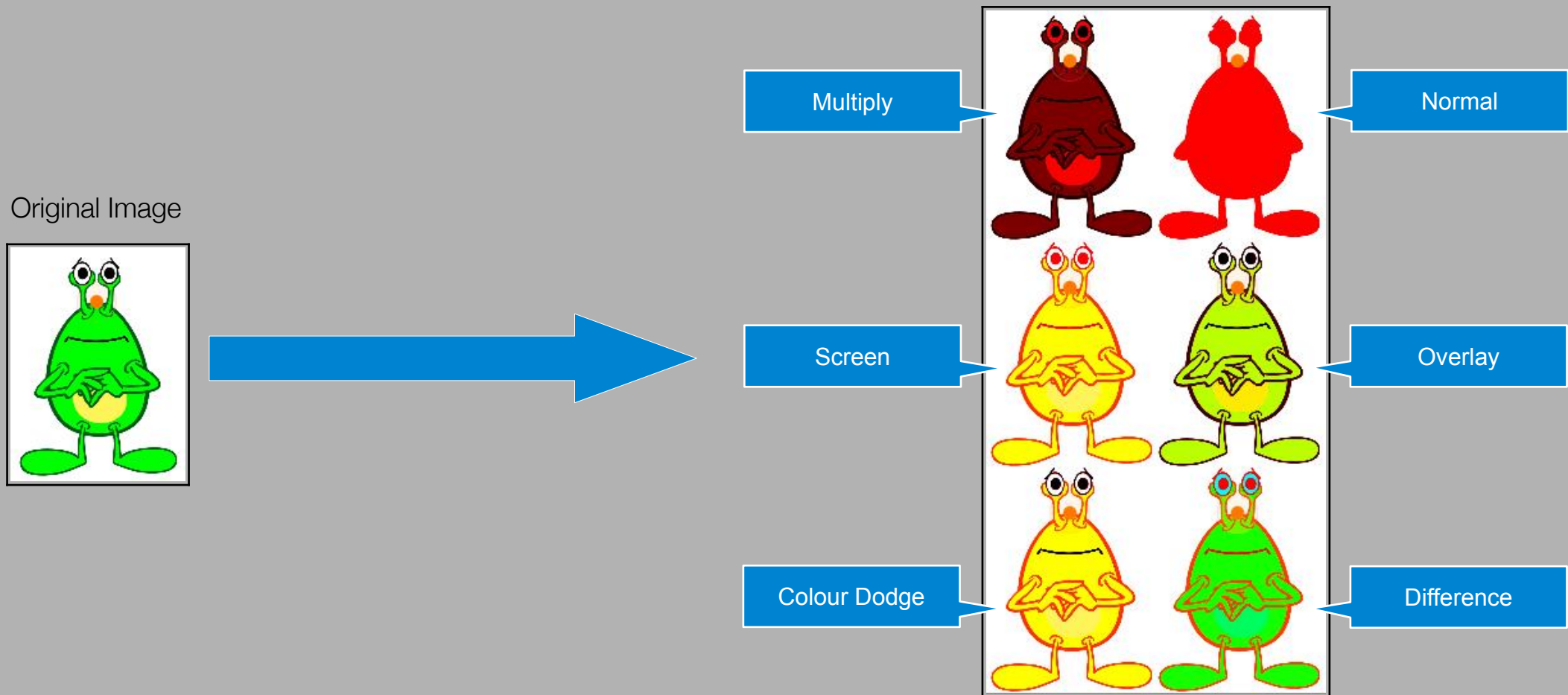
100 %

Press the button to perform a fine adjustment of the percentage.

Blend Modes

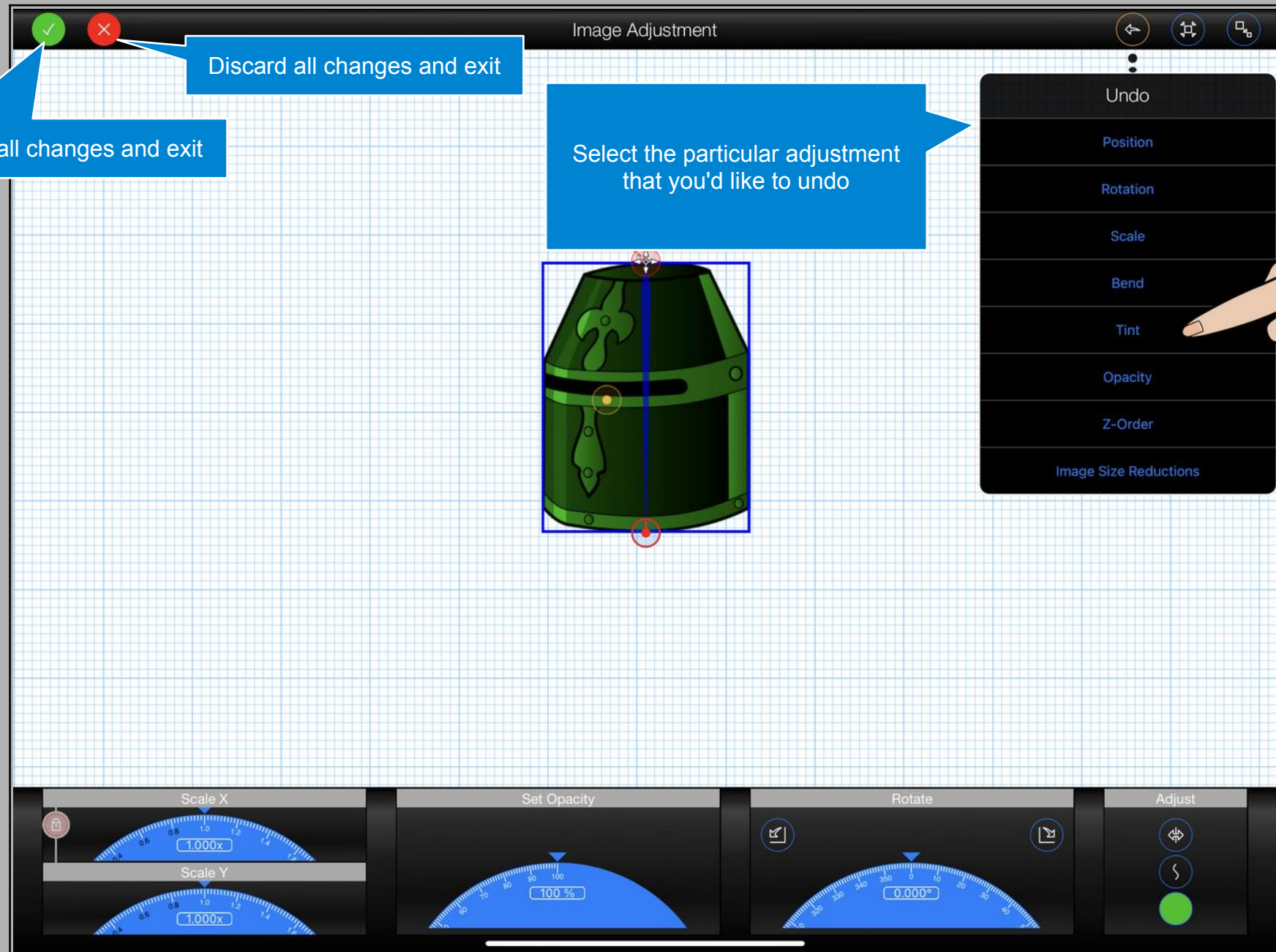
When tinting an image, the selected tint colour is blended with the existing colours in the image. The way in which the tint colour is blended is based upon a 'Blend Mode'.

Here are few different blend mode examples (where red has been applied as a tint colour):



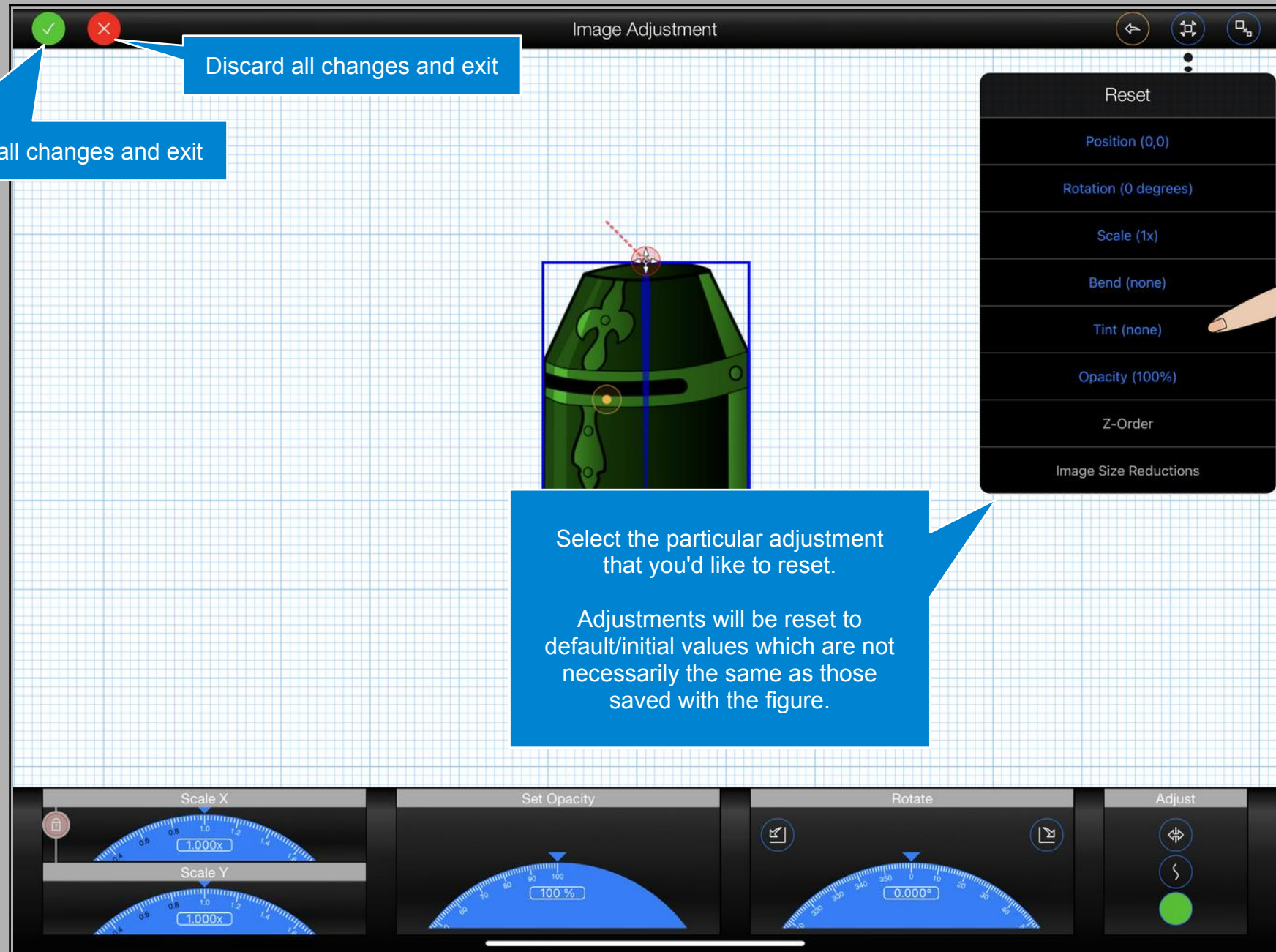
Undoing Image Adjustments

Press the  button to undo an item adjustment. Animation Pro will display an 'Undo' menu:



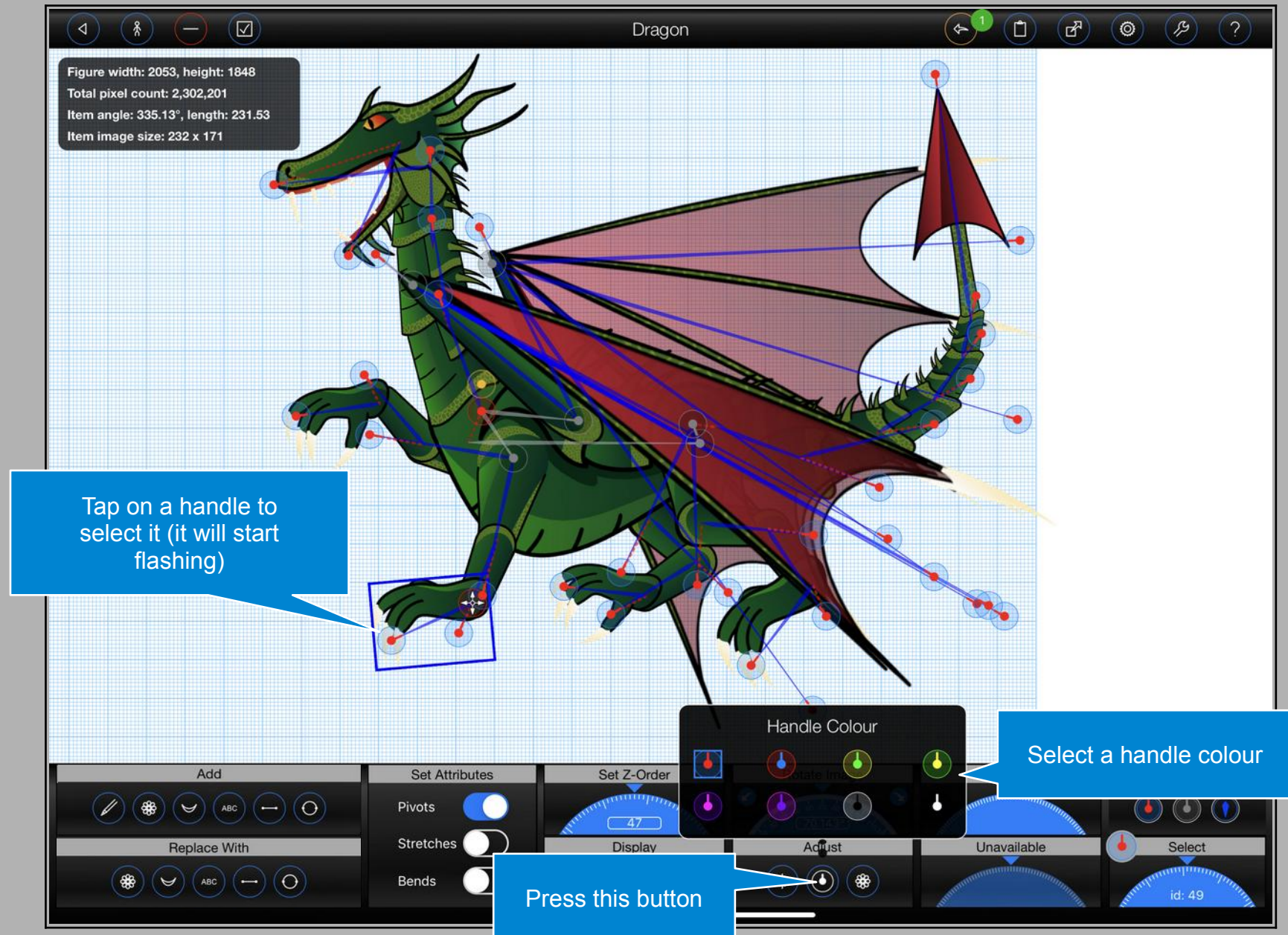
Resetting Image Adjustments

Press the  button to reset an item adjustment. Animation Pro will display a 'Reset' menu:



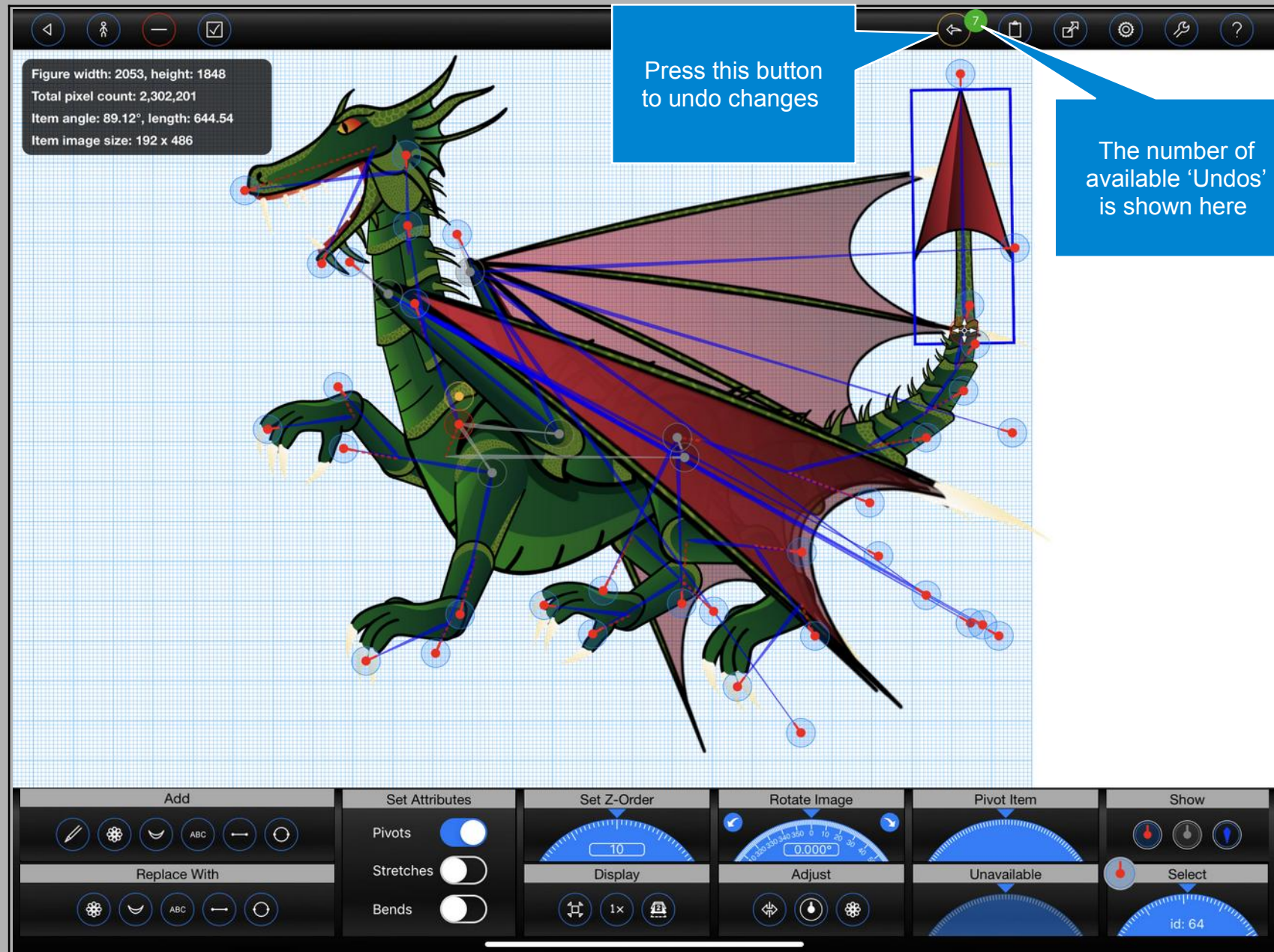
Handle Colours

Complicated figures can have a large number of handles. When animating such figures it can thus be difficult to determine which items belong to each handle. To help make this situation a little easier to deal with, Animation Pro allows one of eight different handle colours to be selected for each item:



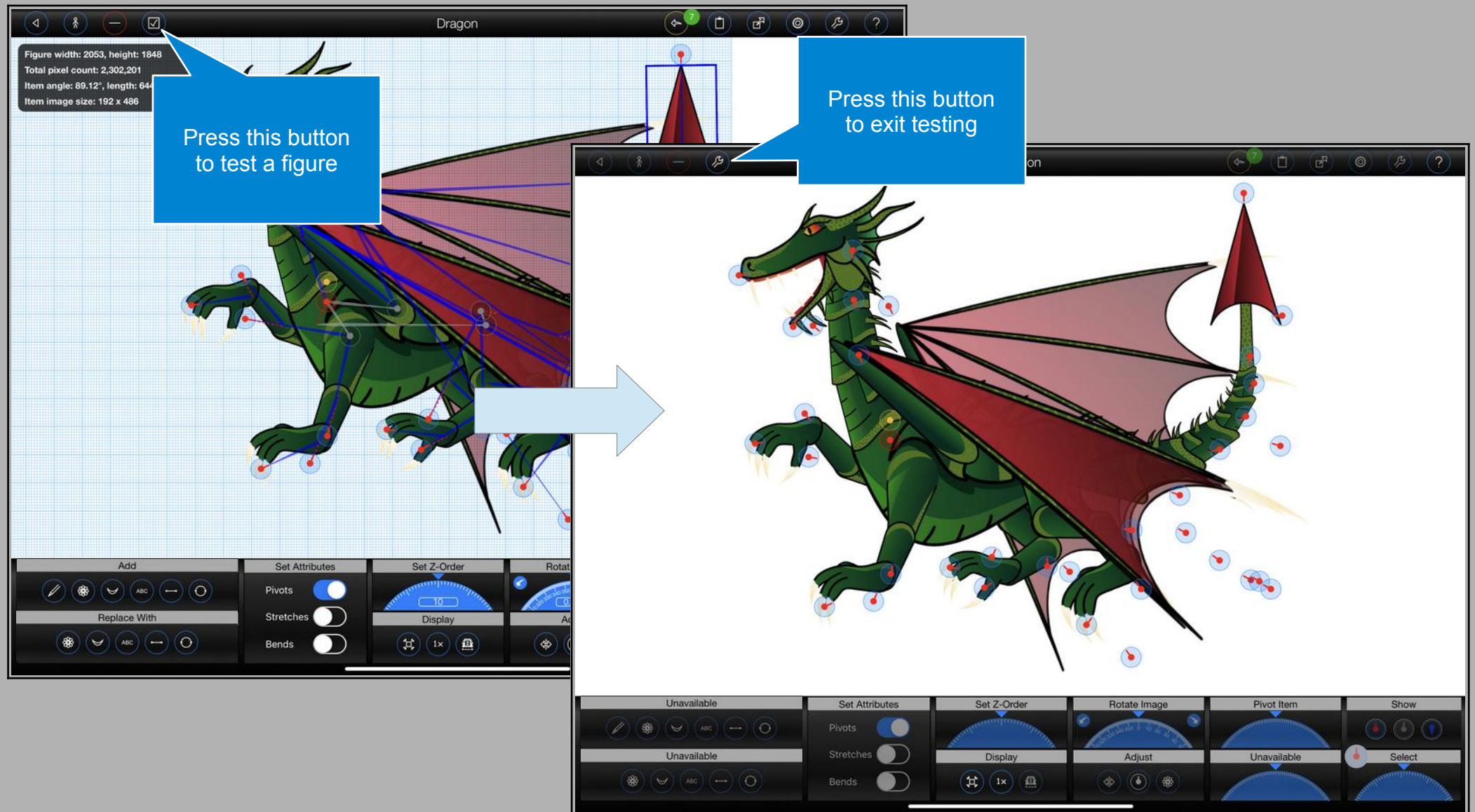
Undoing Changes

We all make mistakes sometimes (I once thought purple pants were rather cool). So as you create a figure, Animation Pro will keep track of your last 50 changes such that you can undo mistakes:




Testing Figures

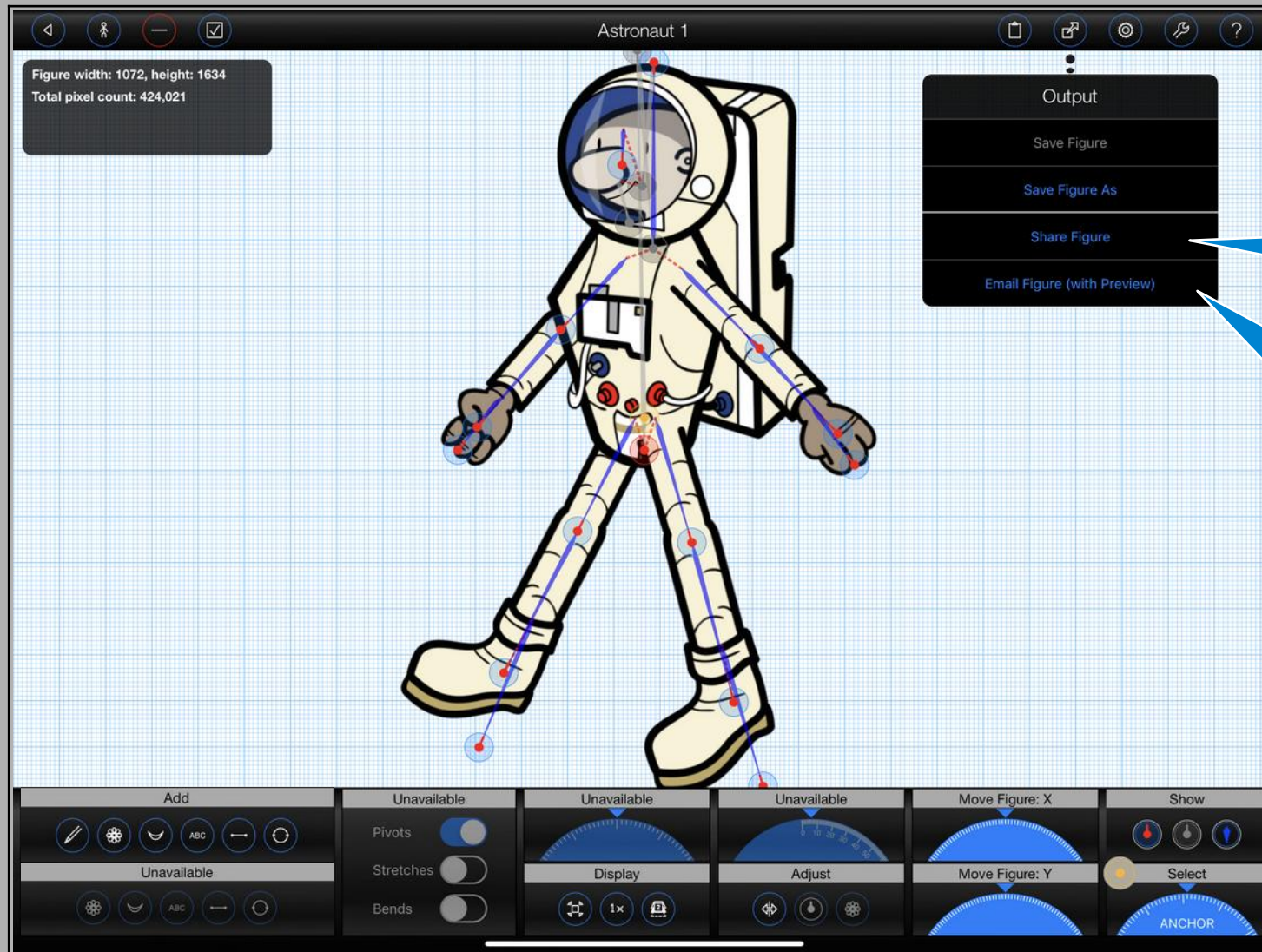
It is possible to test figures, to see how they will behave whilst animating, without leaving the Figure Editor:



When you exit testing, Animation Pro will give you the option to leave all of the figure's items in the positions they were given whilst testing.

Sharing Figures

So you've created the coolest figure ever and now want to share it with your friends? Well, that's easy. Just press the  button at the top of the screen and Animation Pro will give the following two options to choose from:

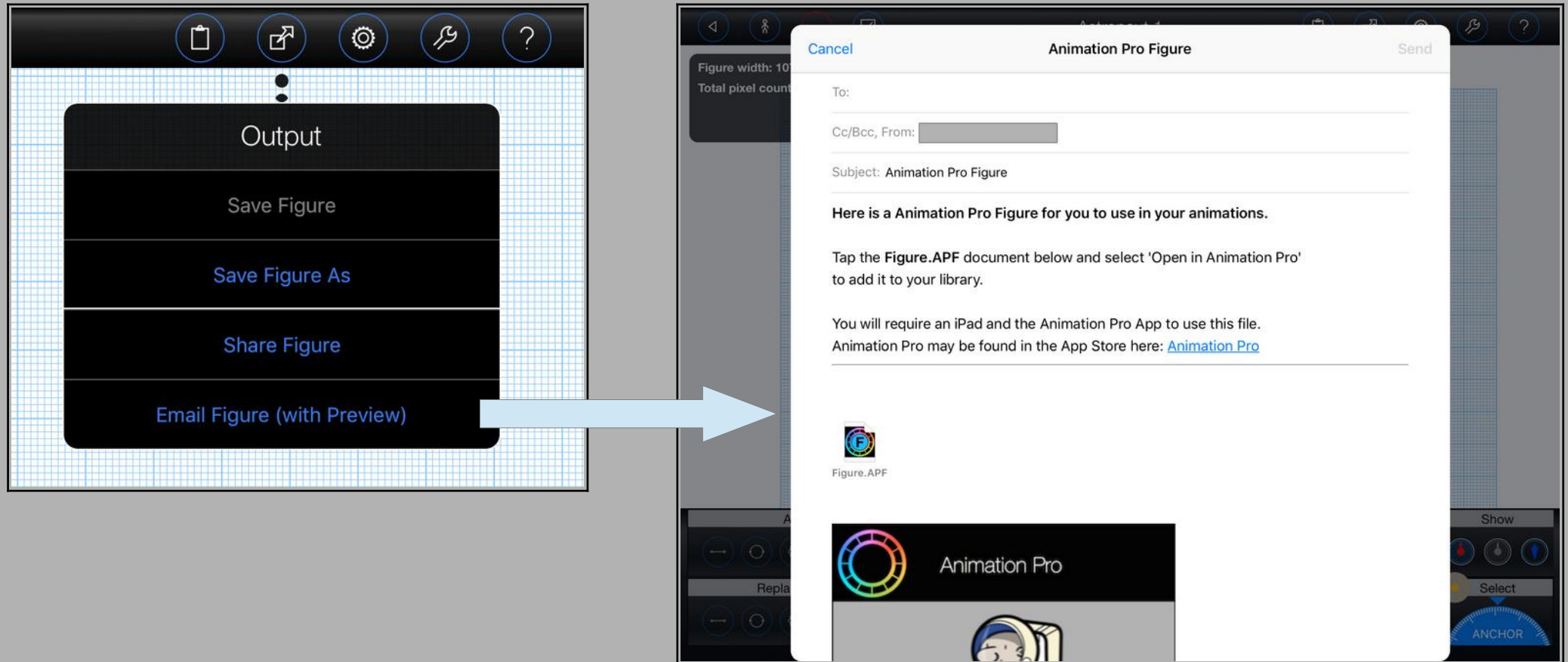


Select this option to open the iOS share options

Select this option to create an email with the figure and a preview image (see next page)

Emailing a Figure with a Preview Image

Select 'Email Figure (with preview)' from the 'Share and Email' menu:



You will, of course, need an Apple Mail account set up on your iPad for this to work!

Onion Skins

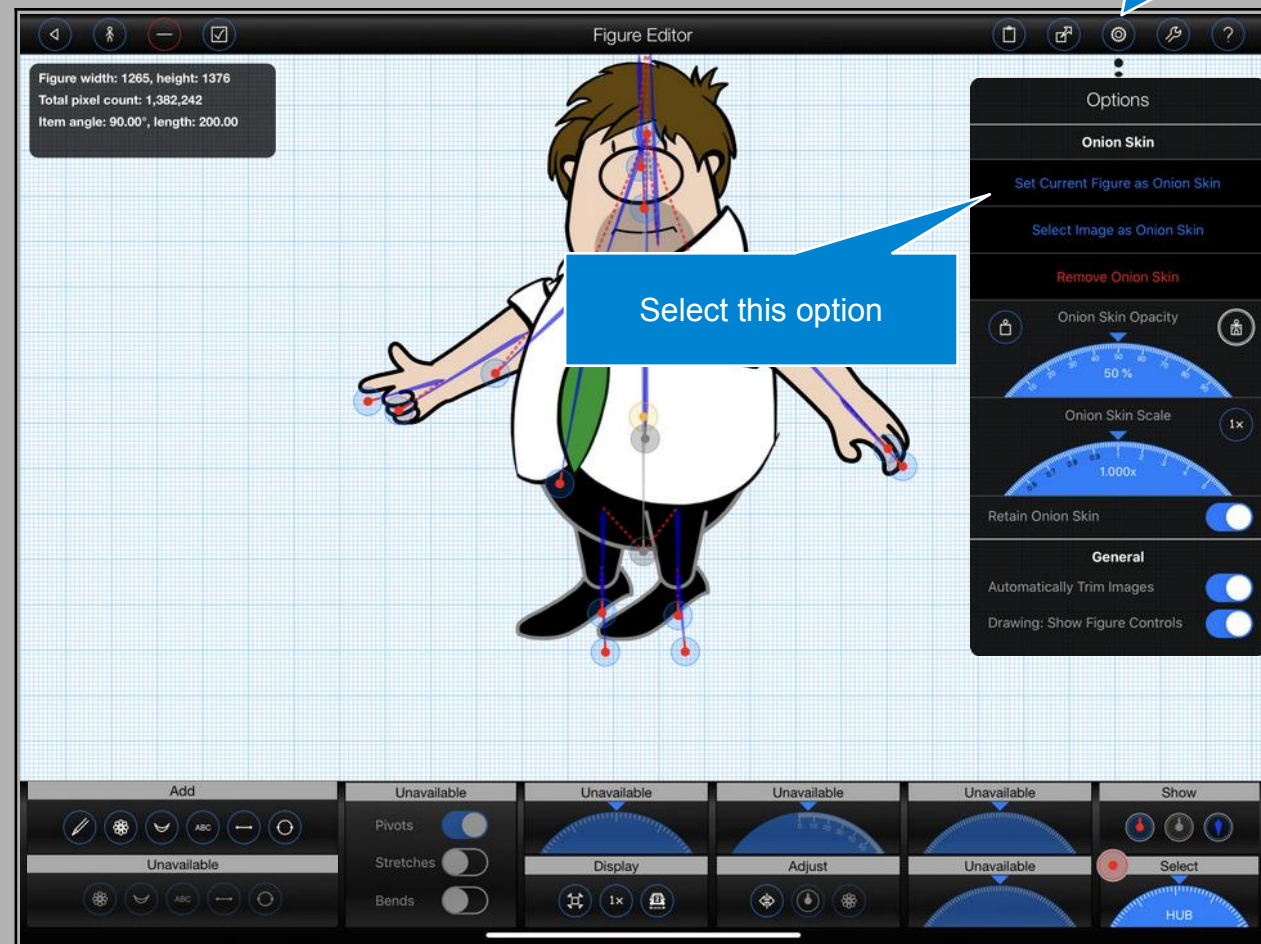
Animation Pro allows the currently displayed figure, or another image on your device, to be used as an onion skin. Onion skins can serve as a useful reference image, making it easier to get a figure's proportions correct. This is especially useful when creating figure substitutes.

Creating an Onion Skin from a Figure

You can create an onion skin from the figure currently loaded into the Figure Editor as follows:

- 1.** Select 'Set Current Figure as Onion Skin' from the 'Options' menu:

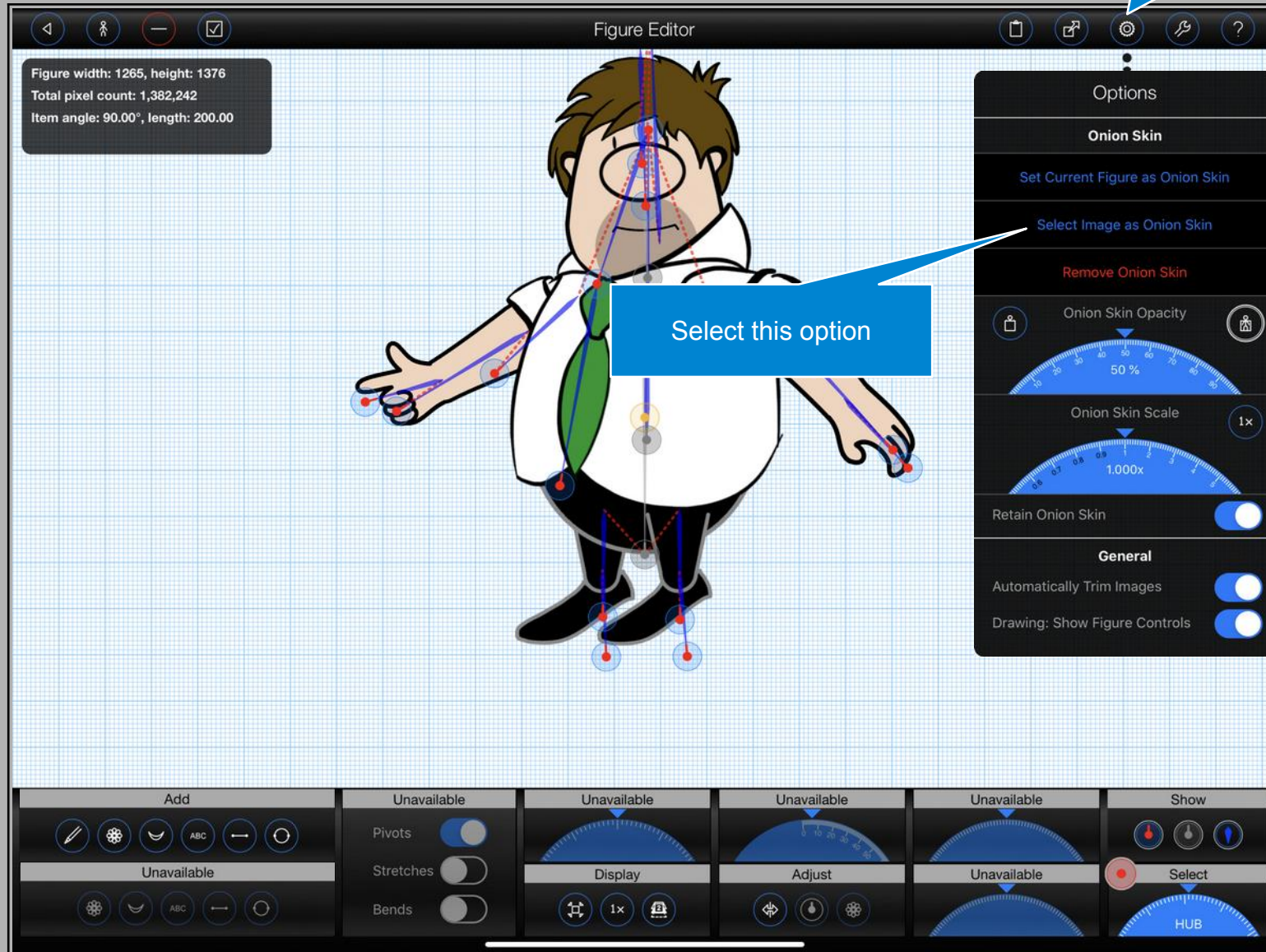
It may seem like nothing happens as, by default, onion skins will be placed beneath the figure. So you may need to move the figure, or an item within the figure, to see its onion skin.



Creating an Onion Skin from an Image

You can create an onion skin from an image as follows:

1. Select 'Select Image as Onion Skin' from the 'Options' menu:

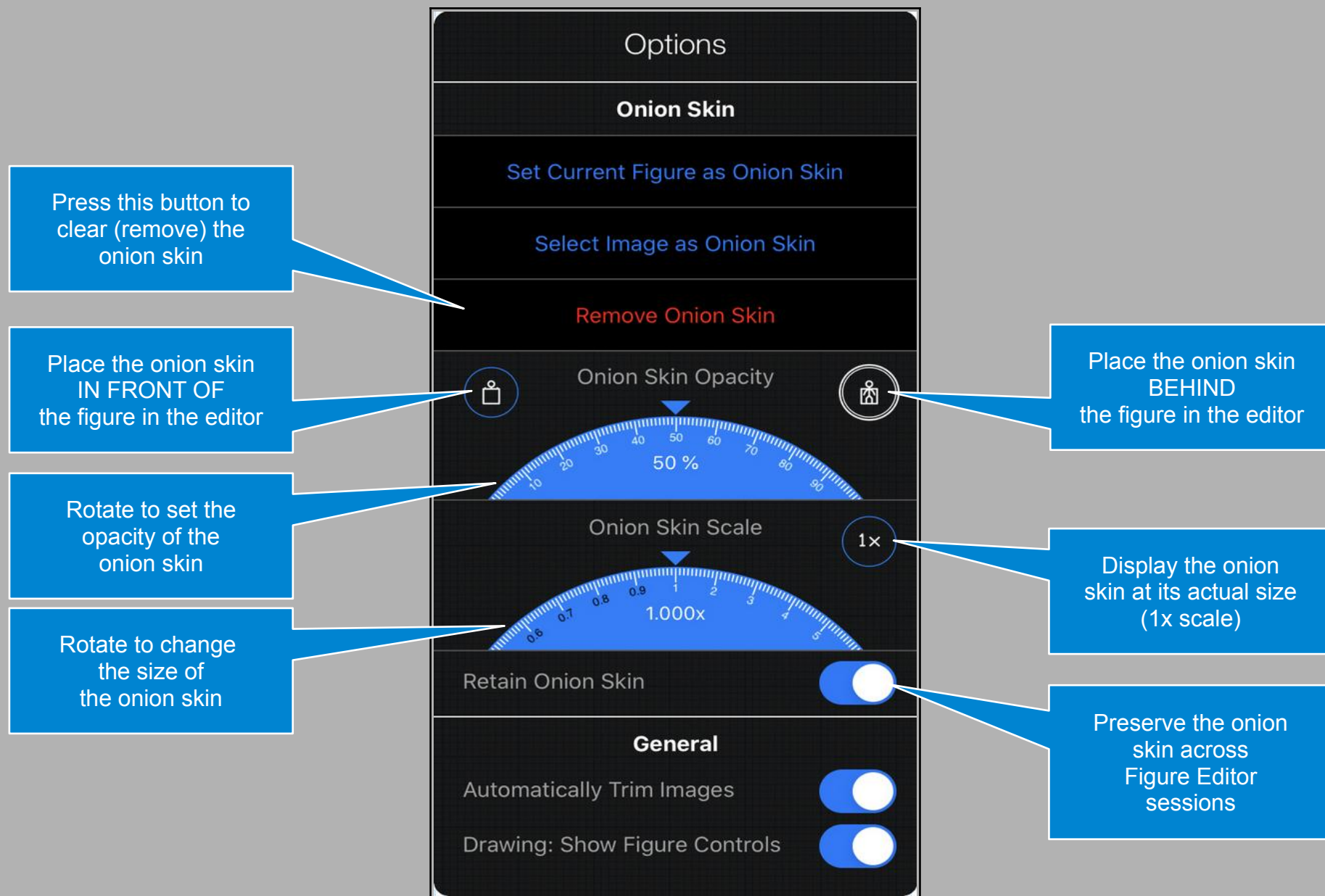


2. Select an image using the Animation Pro File Manager:



Onion Skin Options

A bunch of other onion skin options exist in the 'Options' menu as shown below:

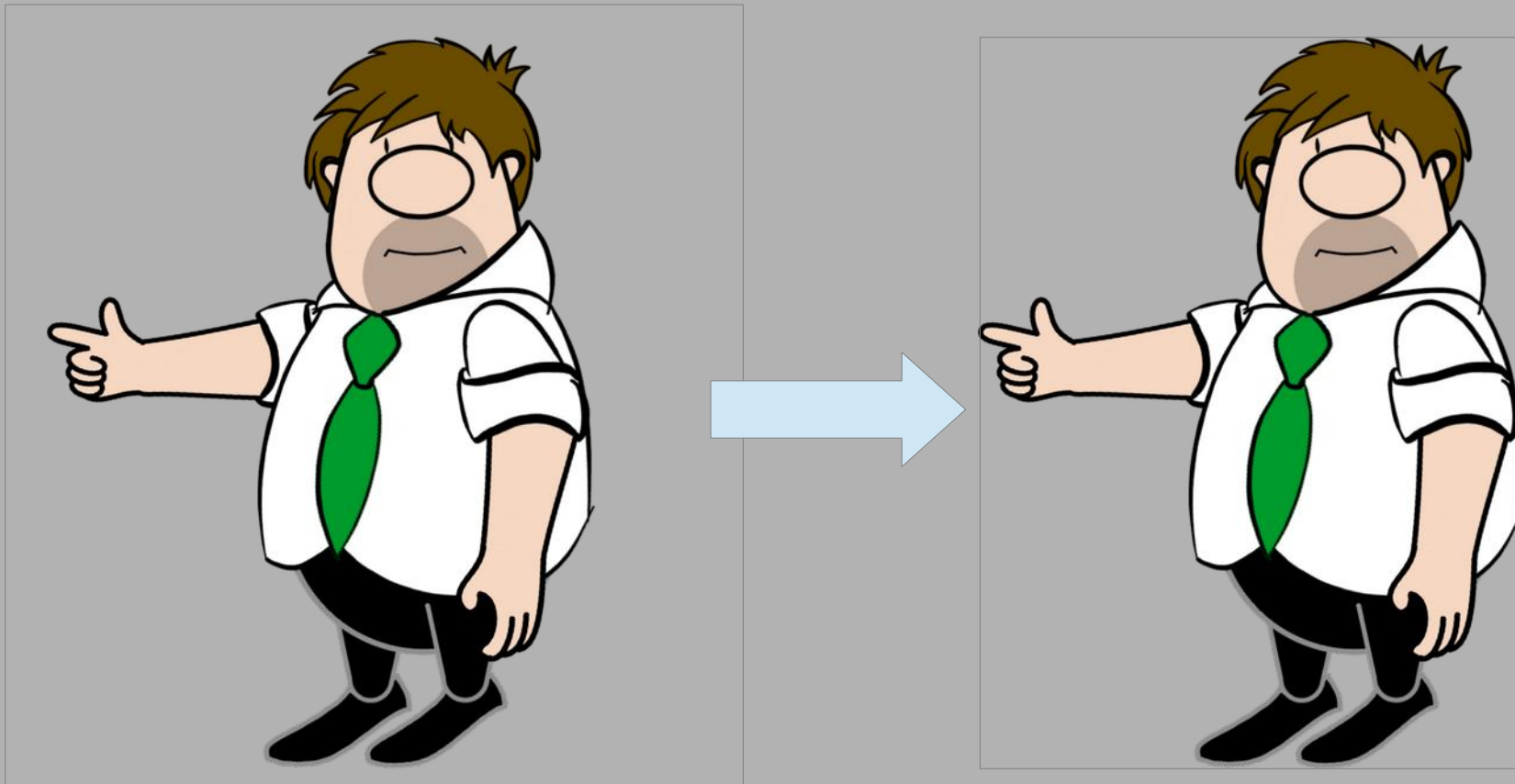


Optimisation

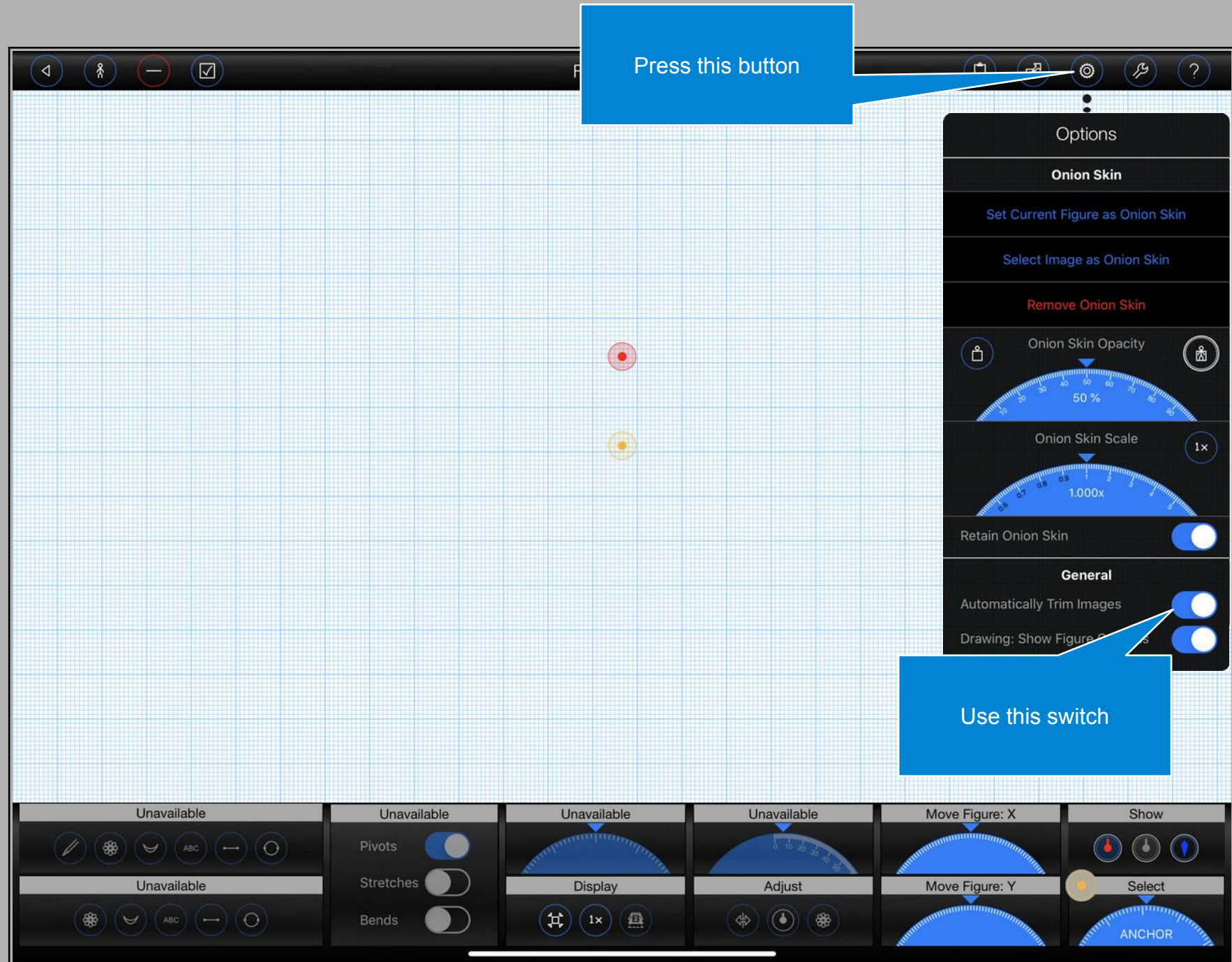
Animation Pro won't try to prevent you from loading ginormously large images into your figures. But please be warned! If you should do so, iOS may ultimately run out of memory and unceremoniously shut Animation Pro down i.e. one moment you'll be loading a humungous image and the next, Animation Pro will be removed from view! So please try and keep your images to a reasonable size. To help you with that, the Figure Editor contains the following features:

Automatically Trimming Images

The Figure Editor can be instructed to automatically trim images when adding them to your figure. This removes any blank pixels from around the images to reduce their overall size without affecting the quality of the images:



You can turn this feature on or off via the 'Automatically Trim Images' switch in the options menu as shown below:



Resampling Individual Images

It is possible to manually reduce the size of any given image in a figure. This process 'resamples' the image, potentially affecting its quality if the size is made too small. But often, if you are dealing with an extremely large image, the process of resampling it to a more reasonable size won't actually produce any discernible difference in quality.

But what is a reasonable size?

Well, the animation frame with a 16:9 aspect ratio is actually **2048 by 1152** pixels. So, unless you intend to zoom right in on a figure, or scale it up to a larger size, whilst animating, there is little point having a figure with a total resolution larger than **2048 by 1152** pixels. So please think about how large your figure is ever likely to be displayed in a frame. If, for example, it will only ever be displayed at half the height of the frame, then the total height of your figure should not exceed 576 pixels (and each image in the figure should have a size relative to that).

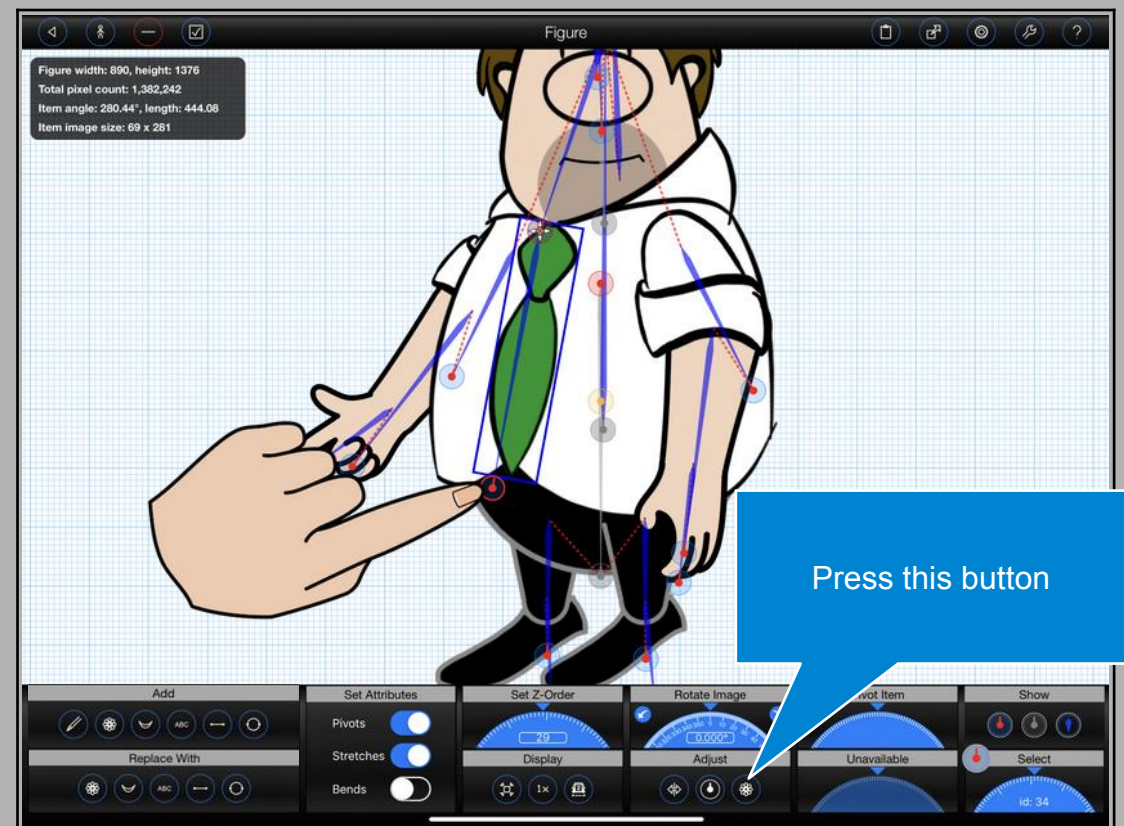
To resample an image in a figure:

1. Tap on the handle of the image item to select it (the handle will start flashing)

Please note:

You cannot resample mouths in a figure.

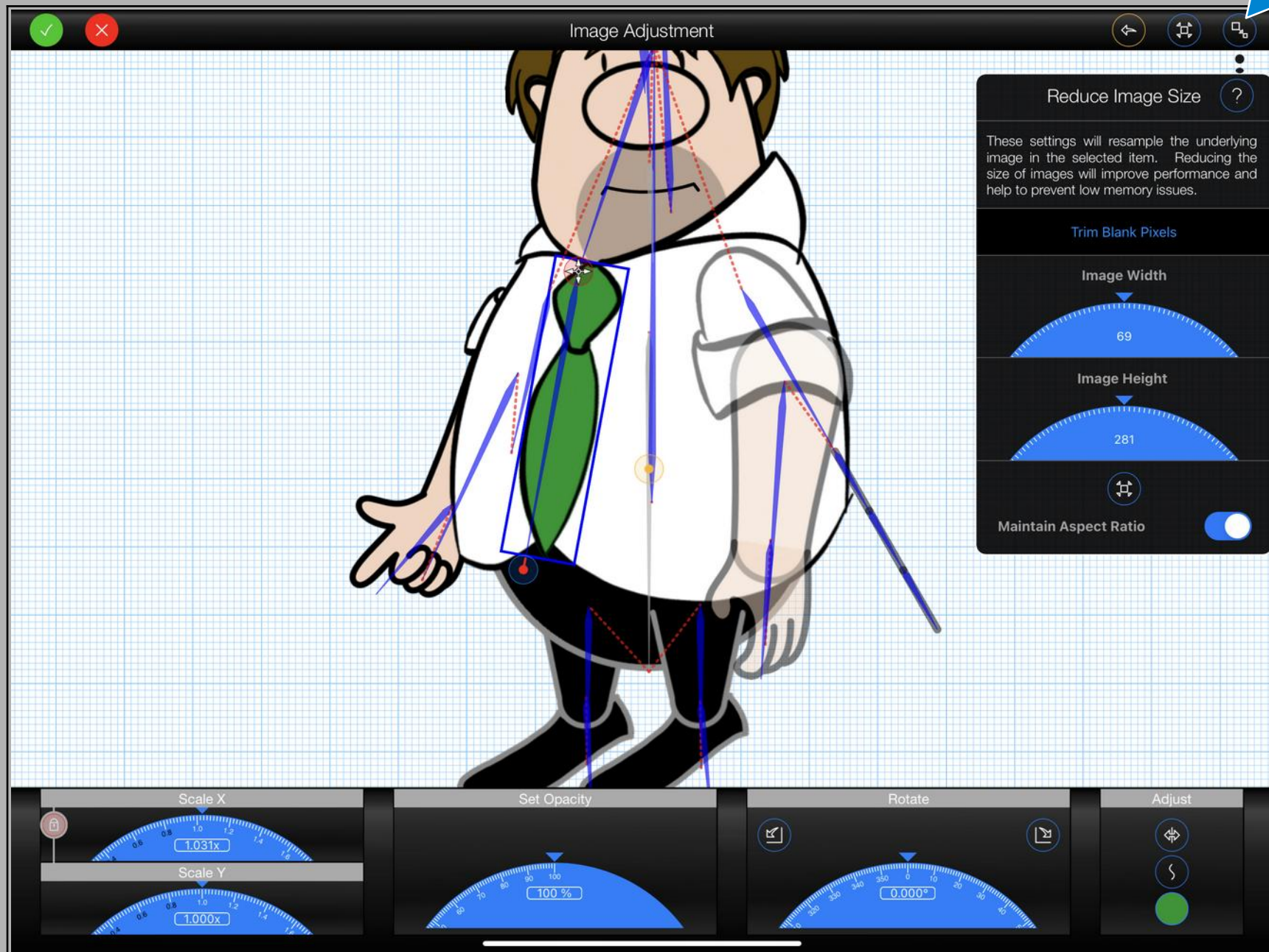
2. Press the 'image' button in the 'Adjust' panel at the bottom of the screen



The 'Image Adjustment' screen will be displayed.

3. Press the 'Resample' button at the top-right of the 'Image Adjustment' screen as shown below:

Press this button



Reduce Image Size ?

These settings will resample the underlying image in the selected item. Reducing the size of images will improve performance and help to prevent low memory issues.


Trim Blank Pixels

Image Width

69

Image Height

281



Maintain Aspect Ratio ☒

Rotate this dial to change the width (in pixels) of the image

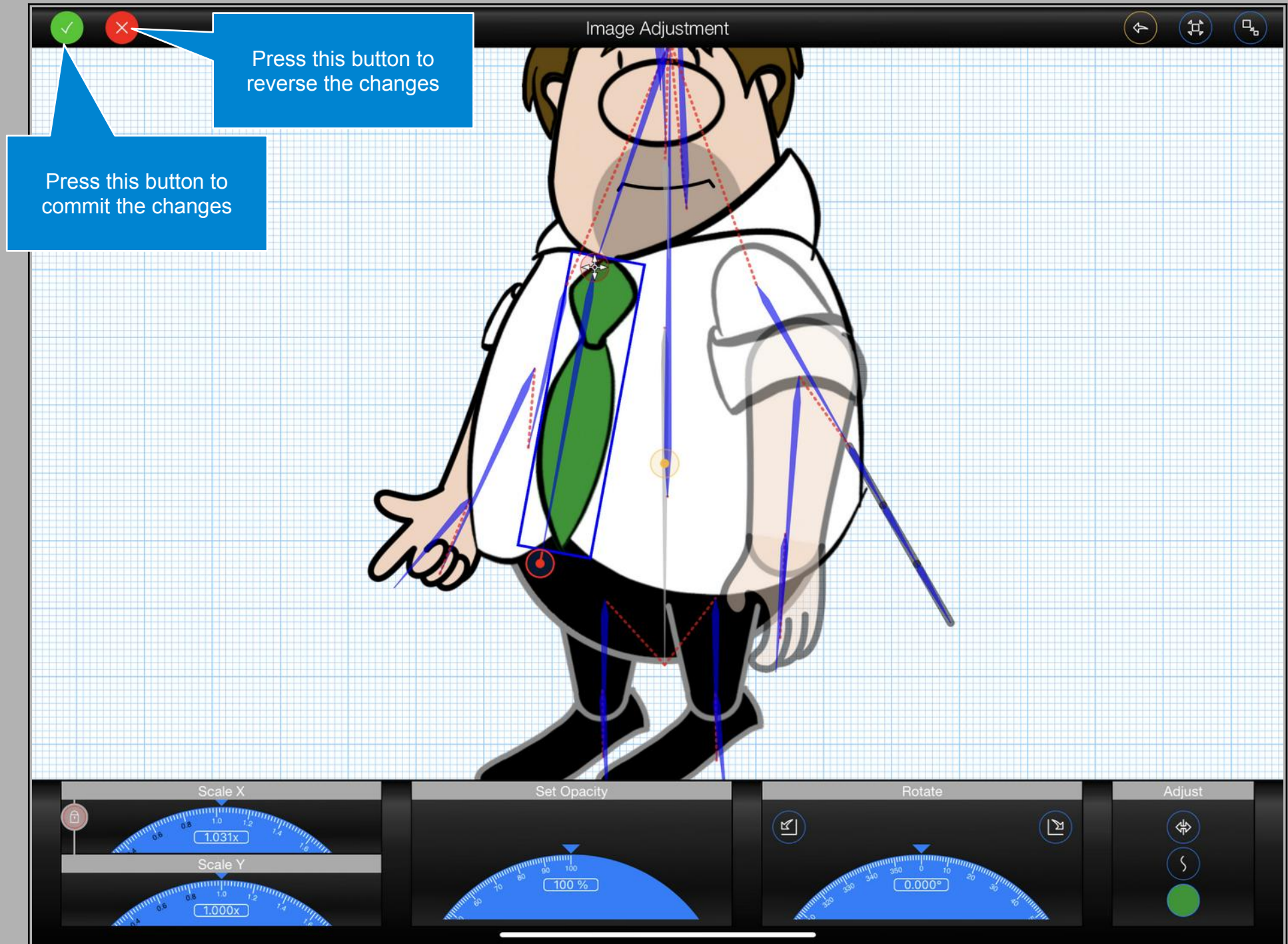
Press this button to set the image back to its original size

Press this button to remove any blank pixels from around the image. Please note that this may cause the image to move relative to the rest of the figure.

Rotate this dial to change the height (in pixels) of the image

When turned on, setting the image height will automatically adjust its width (and vice-versa) to maintain the aspect ratio of the image

4. When you are satisfied with your changes, press the green tick to commit them as shown below:

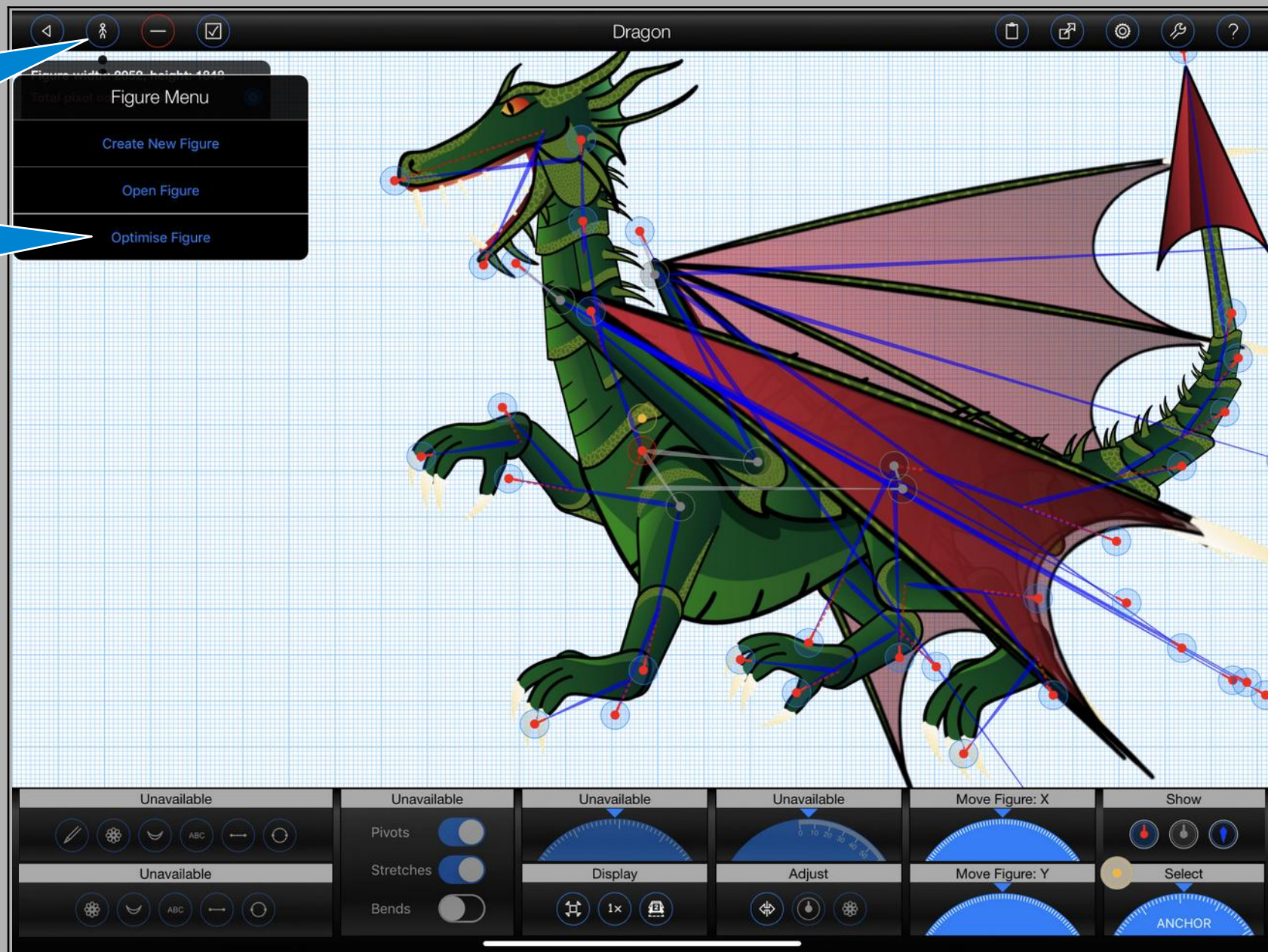


Optimising a Figure

The Figure Editor can automatically resize (resample) **all** of the images in a figure at once to reduce the amount of memory the figure consumes.

Press this button

Select this option



The 'Optimise Figure' popover will be displayed, as shown (right).

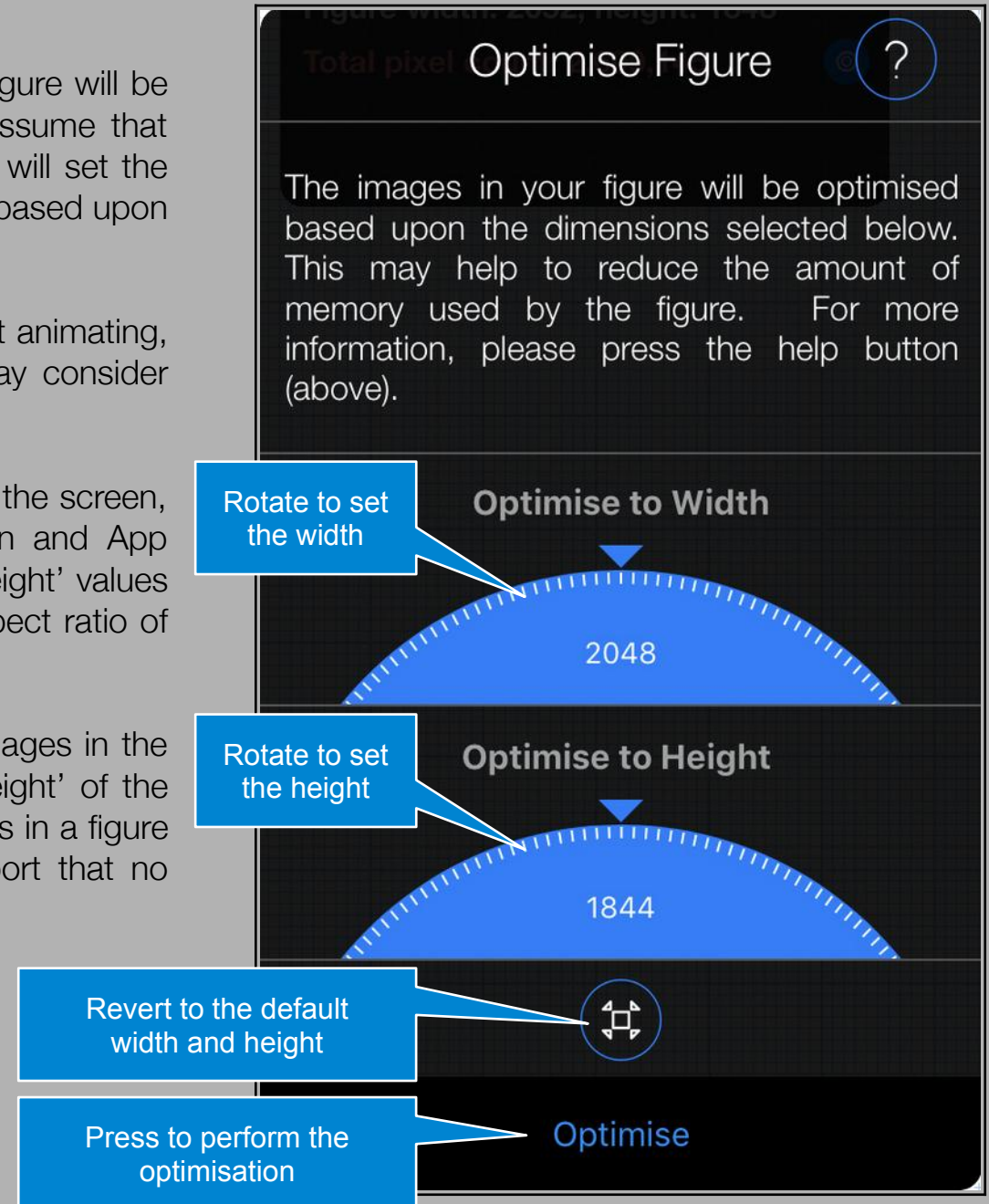
When optimising a figure, you will need to consider how the figure will be displayed in your animations. By default, the popover will assume that **2048 by 2048** will be the maximum size of your figure and it will set the 'Optimise to Width' and 'Optimise to Height' dials accordingly (based upon the aspect ratio of your figure).

If you intend to zoom the virtual camera in on your figure whilst animating, or scale your figure to a larger size whilst animating, you may consider making the values larger.

If your figure will only ever be displayed at, say, half the size of the screen, then it **will** be advantageous (in terms of memory utilisation and App performance) to set the 'Optimise to Width' or 'Optimise to Height' values to half of the frame's width or height (depending upon the aspect ratio of your figure).

The process of optimising the figure will resample all of the images in the figure relative to the 'Optimise to Width' and 'Optimise to Height' of the figure. This process will only ever reduce the size of the images in a figure i.e. where large values are selected, Animation Pro may report that no optimisation is necessary.

For more information regarding memory utilisation and performance, please refer to the 'Memory' topic in the Animation Pro help (see left).

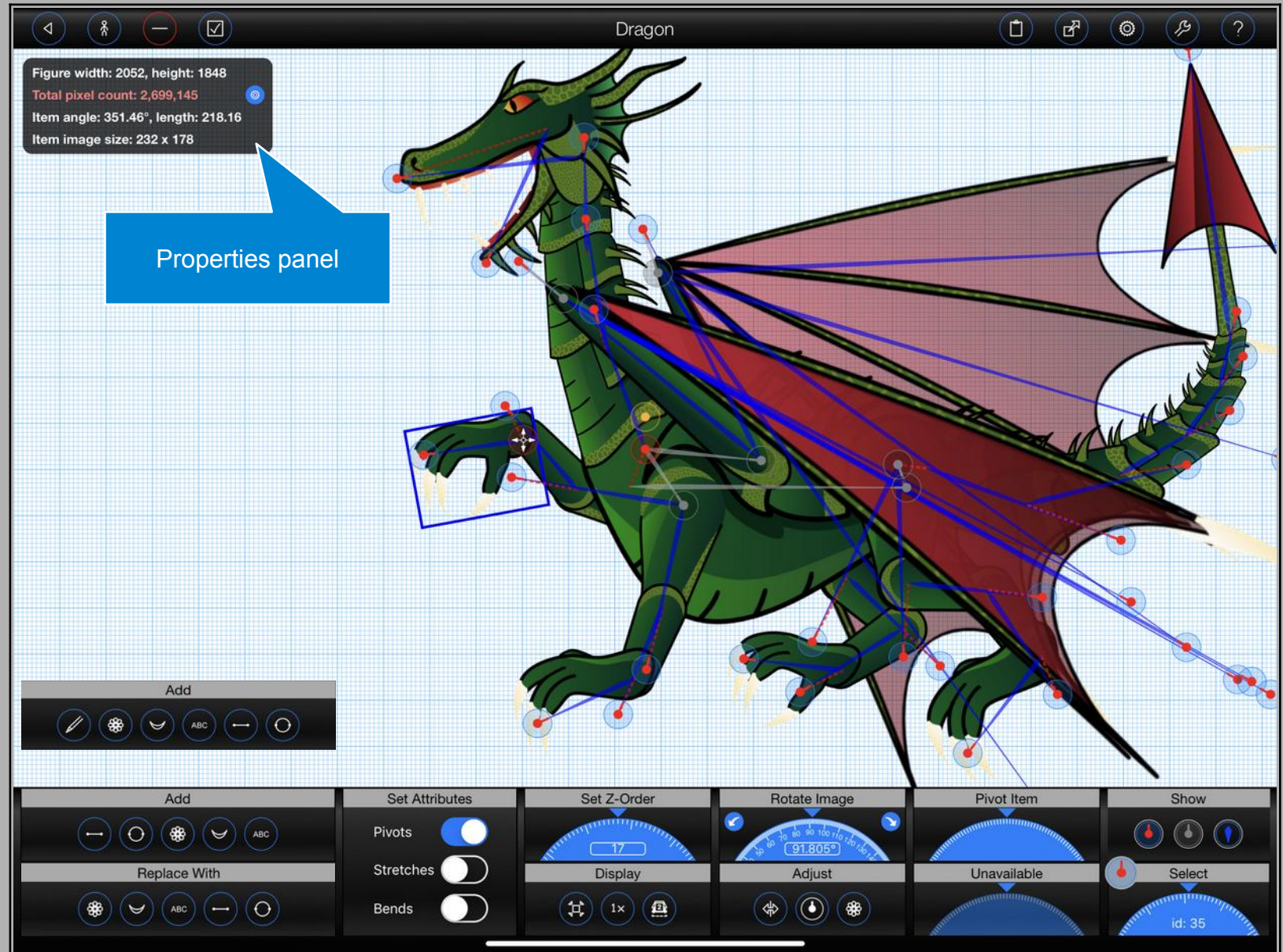


The 'Properties' panel

Animation Pro will display a 'Properties' panel at the top-left corner of the Figure Editor. This panel displays the properties of the figure and the currently selected item (in the figure):

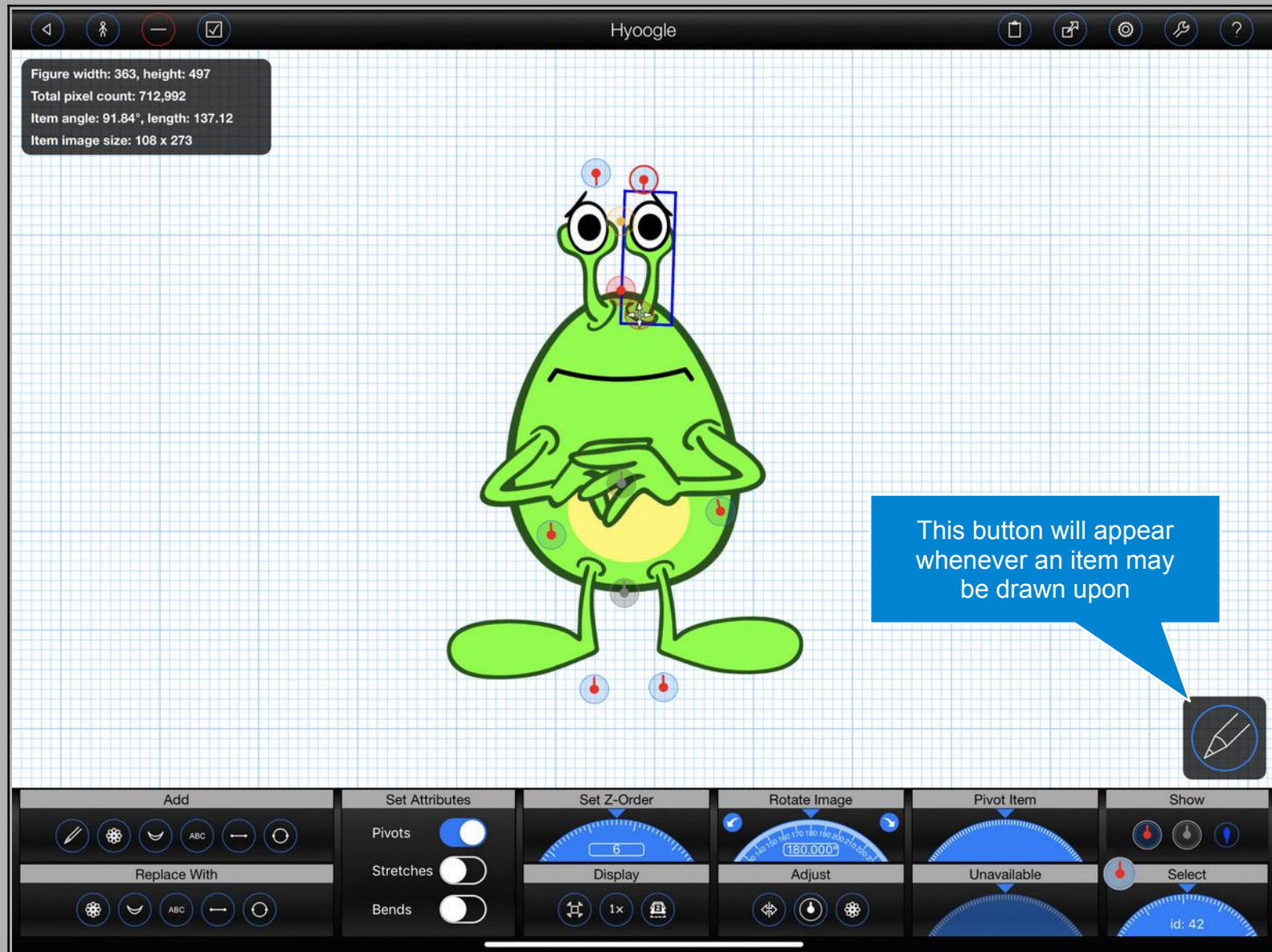
As shown (right), when the total number of pixels across all images in the figure exceeds 2 million pixels, the figure's 'Total pixel count' will be displayed in red and a button will appear. You can press this button to optimise the figure.

Please see the previous pages (above) for more information regarding figure optimisation.



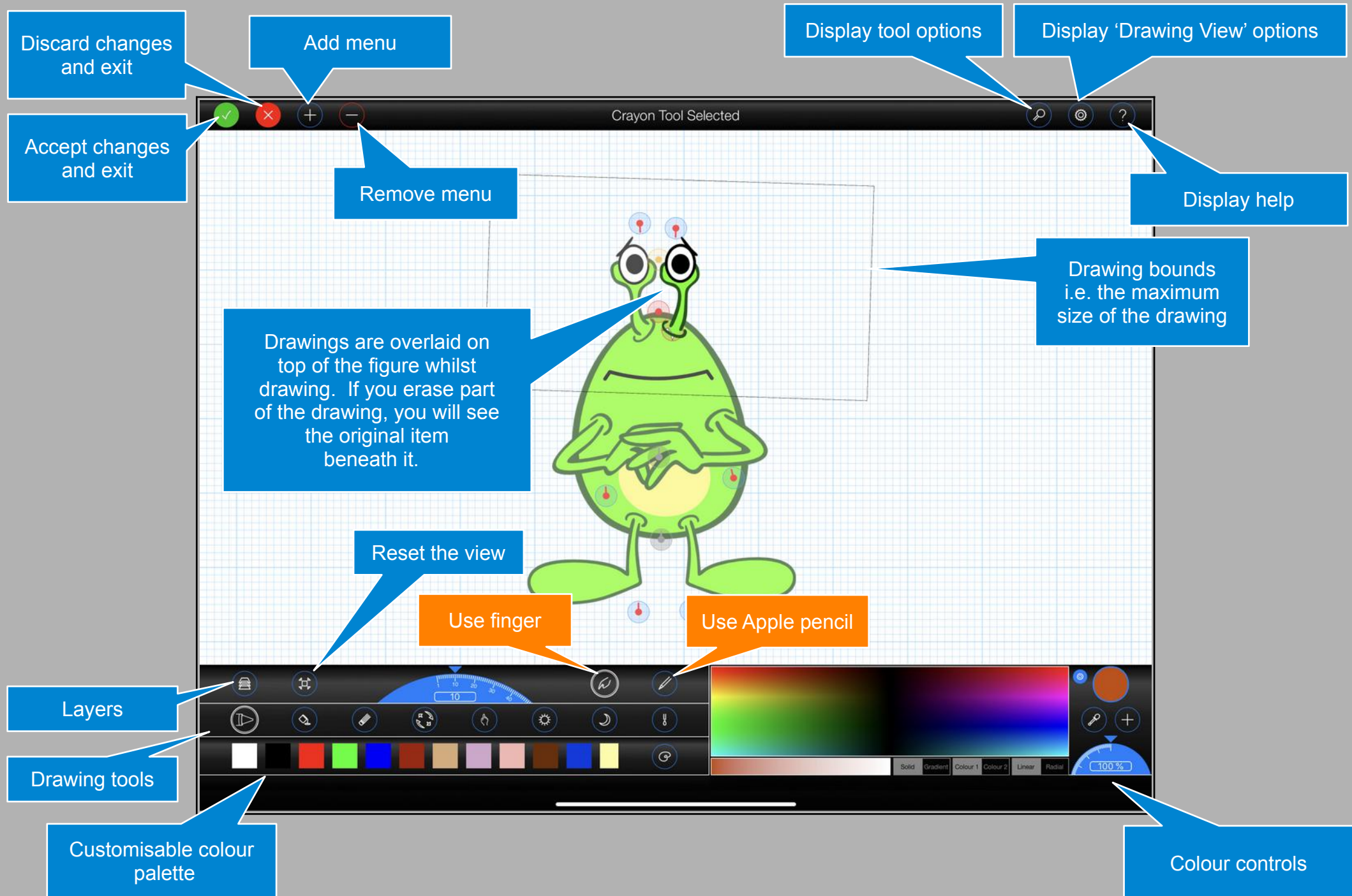
Drawing

Animation Pro 2.0 allows any image item in a figure to be drawn upon whilst creating the figure. Whenever an image item is selected, a 'Drawing' button will be displayed as shown below:



Tap on the 'Drawing' button to draw on the image item.

The 'Figure Editor' will display the 'Drawing View':

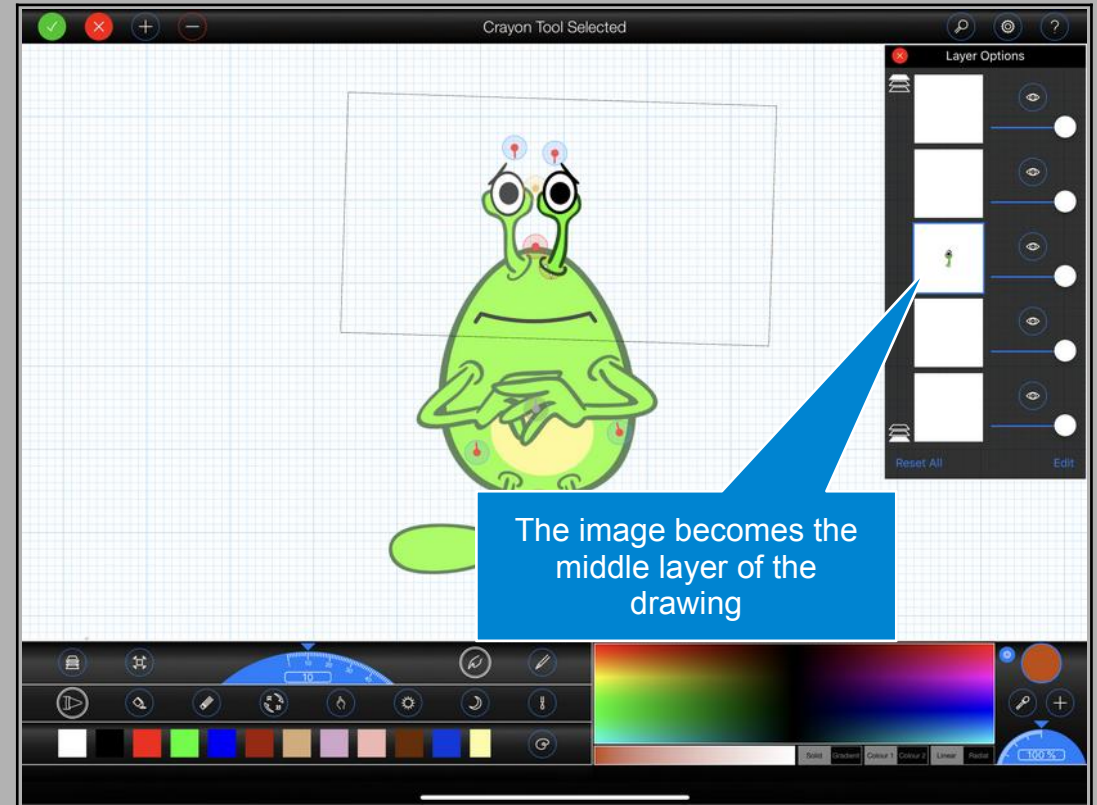


All About Drawings

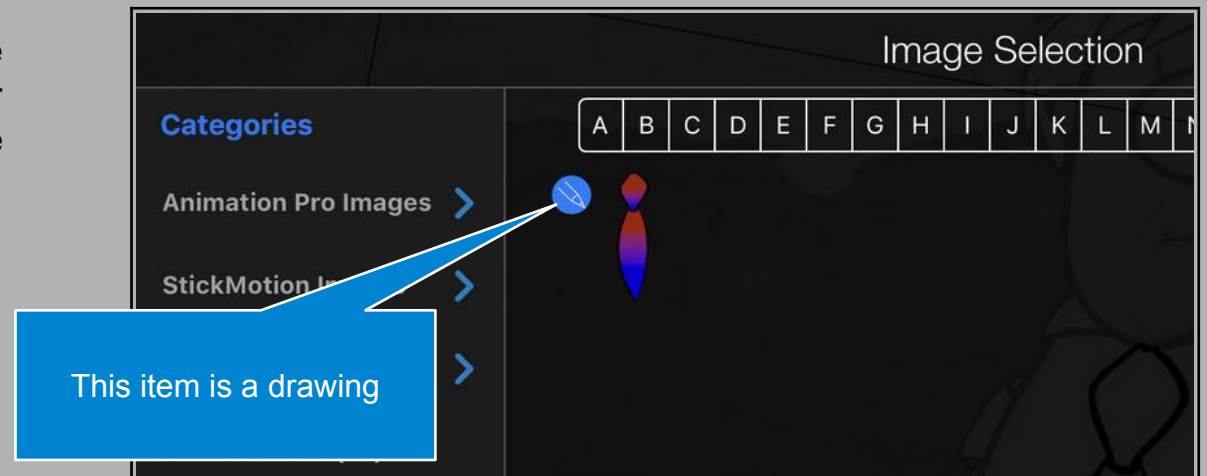
1. Drawings vs. Images

Unlike standard images, Animation Pro drawings are composed of 5 separate layers that may be individually modified at any time. Drawings also contain important metadata that allow one drawing, for any given item, to be easily substituted with another drawing (for that item) without the need for image adjustments to fix alignment issues.

Now, it is possible to add a drawing directly to a figure in the Figure Editor (by tapping on the 'Drawing' button in the 'Add' panel). Any standard image in a figure, however, will be automatically converted to a drawing when you start to draw on it. In this case, the original image will occupy the middle layer of the new drawing, see top-right:



Within the 'File Manager', drawings may be distinguished from standard images by looking for the blue 'pencil icon' at the top-left of the thumbnails, see bottom-right:



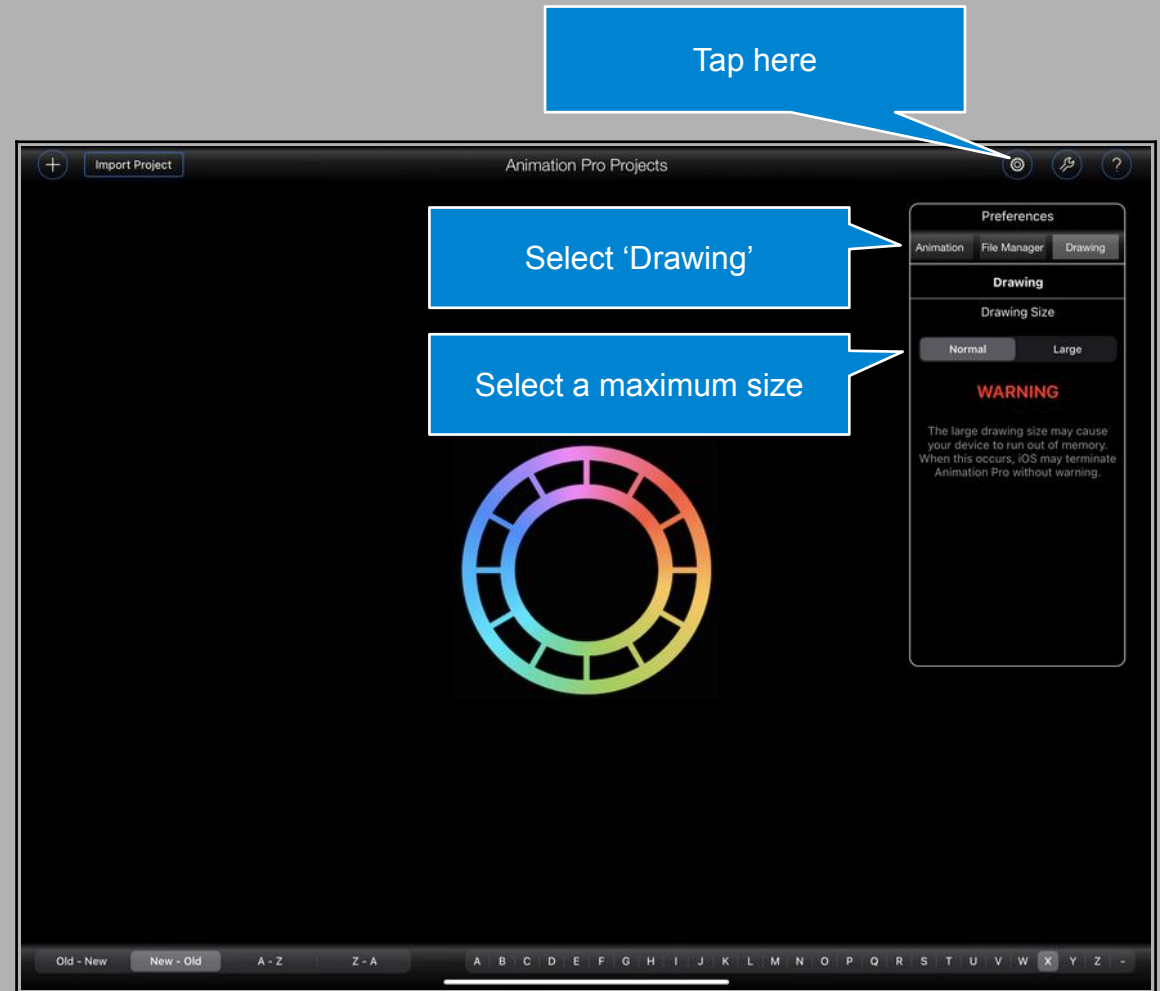
2. Drawings are not infinite in size

Drawings contain 5 separate layers, each of which is an image that needs to be loaded into your device's memory whenever a drawing is being modified. Now there's a pretty good chance that your iPad won't cope with 5 ∞-pixel images so Animation Pro, by default, will limit drawings to a 'Normal' size that is generally more than enough for individual items within a figure.

You can, however, choose to override this setting to give your drawings 4 times the number of pixels.

To change the default size:

1. Open the 'Preferences' popover from the 'Projects' screen
2. Select the 'Drawing' category
3. Choose the desired 'Maximum Size'



WARNING

Choosing the higher resolution may cause your device to run out of memory when modifying a drawing or creating an animation with multiple high resolution drawings in it. When this occurs, iOS may terminate Animation Pro without warning!

3. Drawings may appear bigger or smaller than they actually are

It is entirely possible that you will never see a drawing who's pixels are exactly the same size as the pixels on your device's screen as:

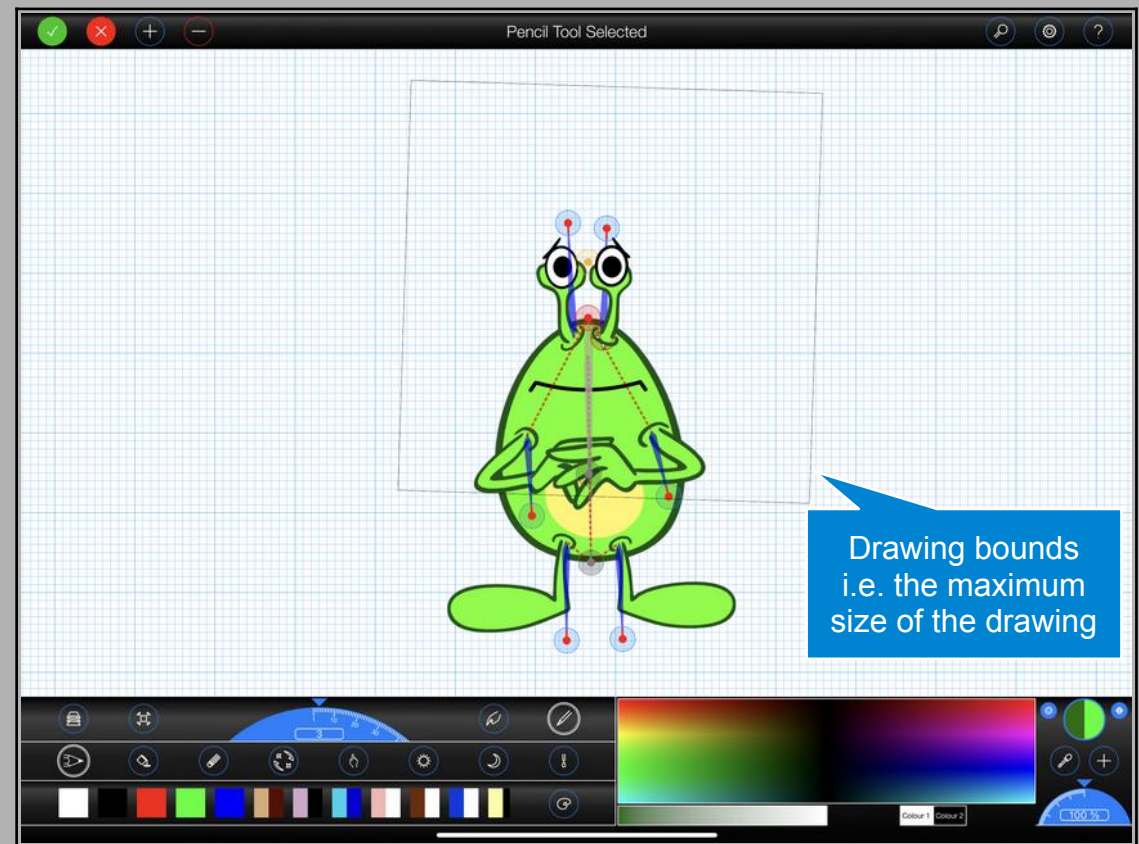
- Depending upon the device you are using, the animation frame may be scaled to fit the physical screen
- You may have expanded/contracted the view using two-fingers (pinch-to-zoom)
- The item, containing the drawing, may have been scaled
- The image, representing the drawing in the item, may be been scaled via an 'image adjustment'

In the example shown right, the drawing bounds make it look like the drawing is quite small when it is, in fact, 1024x1024 pixels in size.

In this case, the drawing has been constructed from an image of the figure's eye which was quite large in size. When added to the figure, the item was scaled down.

Please note:

In Animation Pro, all of this potential scaling does not affect the underlying resolution of the images/drawings in a figure. It simply adjusts the size at which they are displayed.




Drawing Tools, Palette and Colour Controls

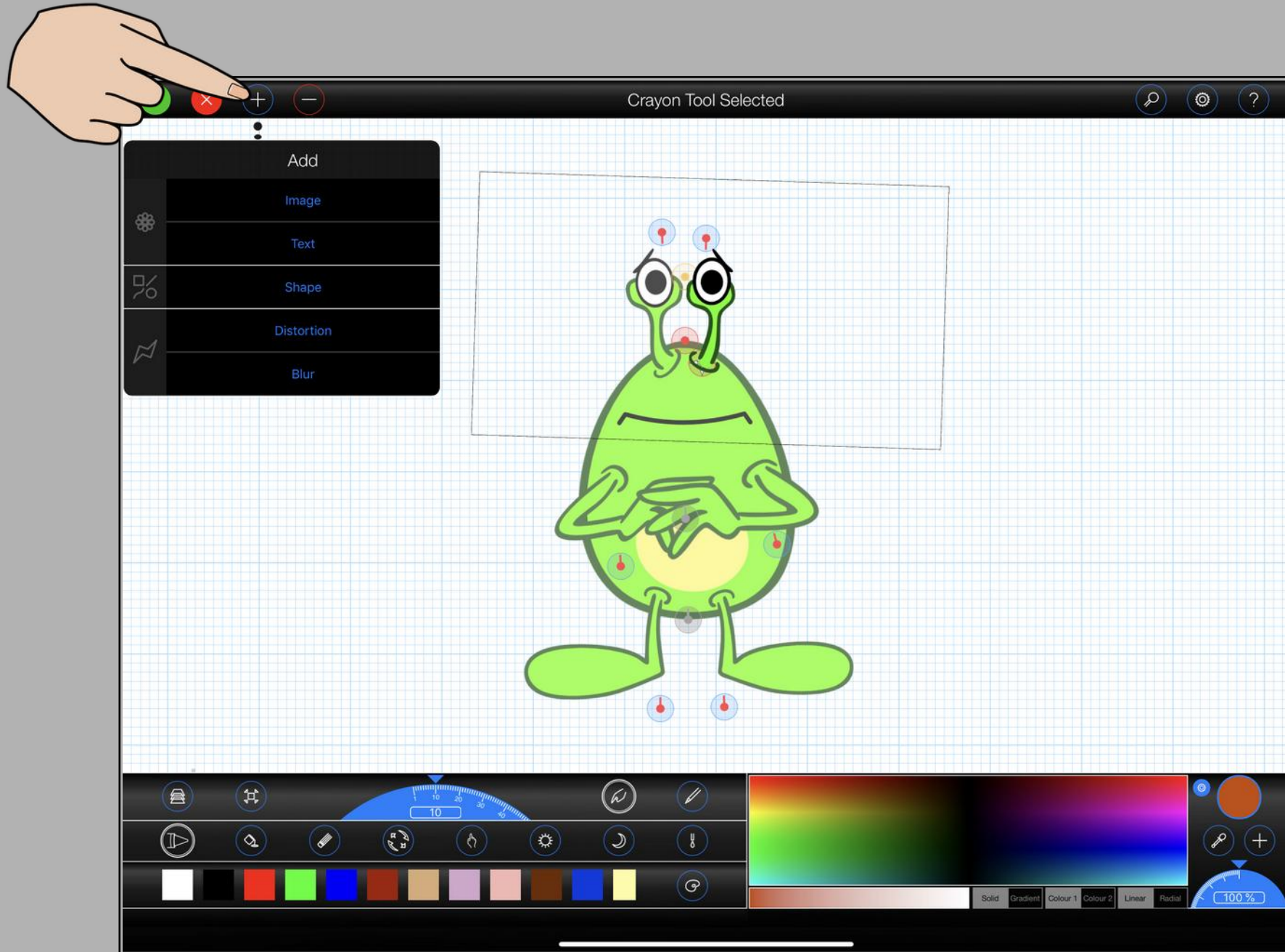
You will find a whole bunch of controls at the bottom of the 'Drawing View' as shown below:



Now all of these tools have been described in great, if not exceedingly boring, detail in both the 'Creating Images' and 'Creating Mouths' help topics (see left). So please check them out if your life is just a little bit too exciting (or you'd just like a little bit more information). But please note that a few of the tools have moved - their new locations will be outlined on the next page...

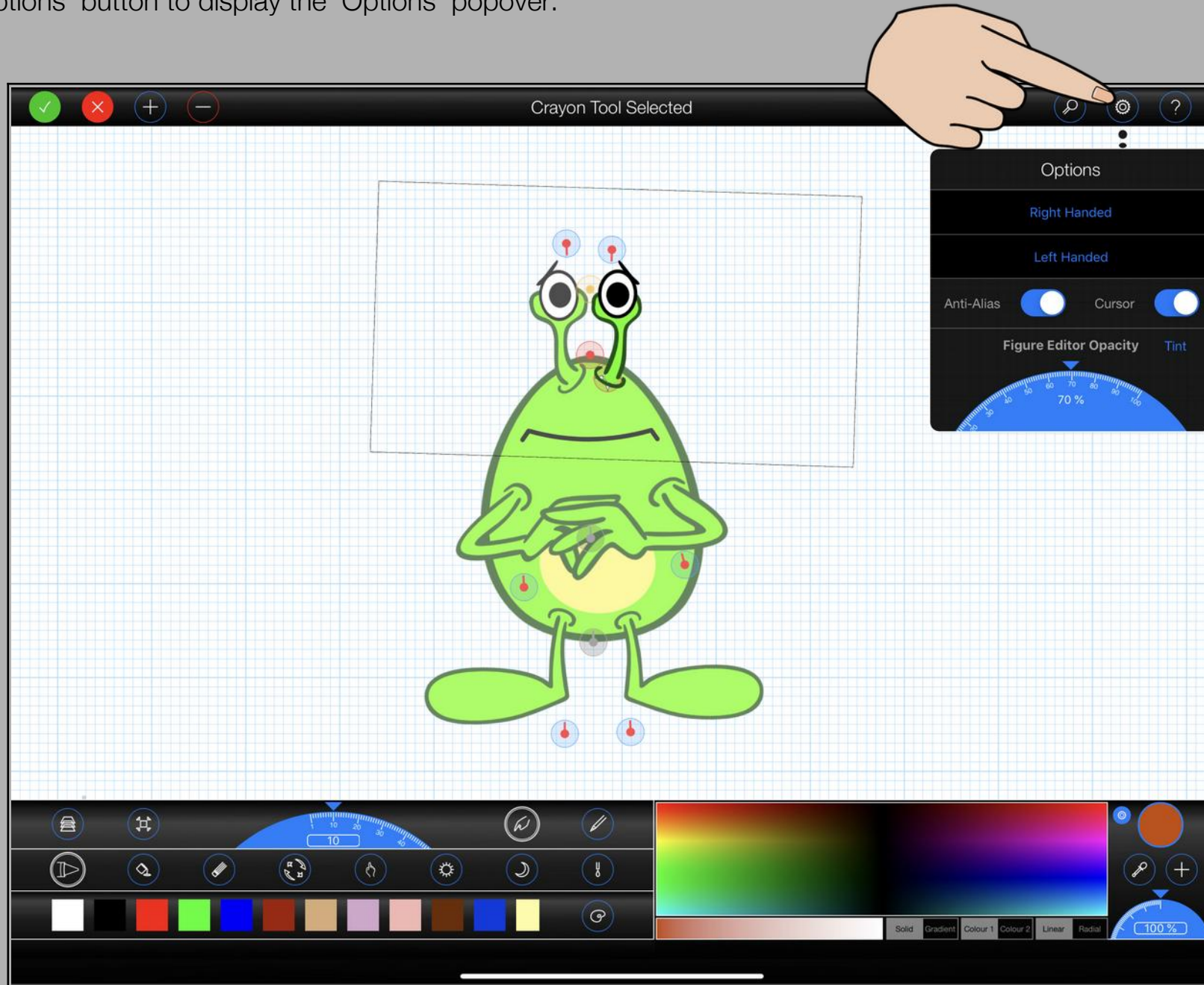
Adding Images, Text, Shapes and Effects

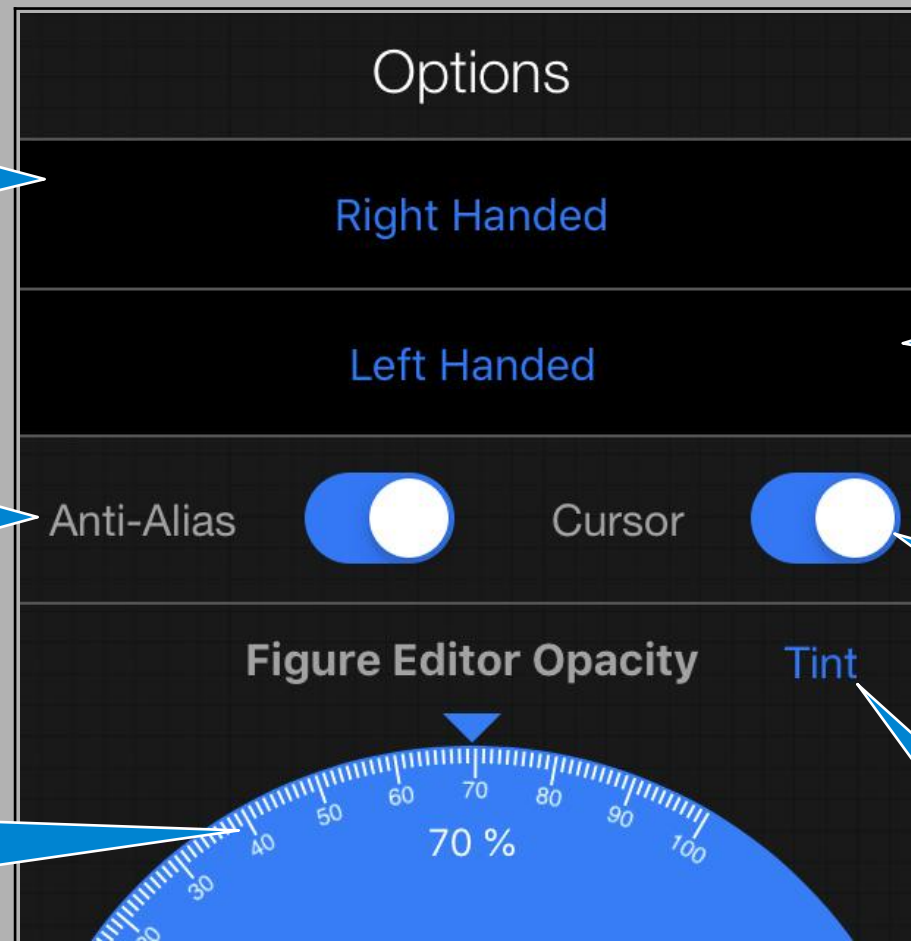
If you'd like to add images, text, shapes or effects to a drawing, please tap on the  button at the top of the screen:



Drawing View Options

Tap on the 'Options' button to display the 'Options' popover:





Arrange the 'Drawing View' display for right-handed usage

Arrange the 'Drawing View' display for left-handed usage

Controls whether drawing operations anti-alias (leave on for smoother lines)

Controls whether a cursor is displayed or not

Controls the opacity of the underlying figure (adjust this dial to make the drawing easier to see)

Press to tint the 'Drawing View' (this can make it easier to see white content)

Adding Drawings to a Figure

Any image item within a figure may be drawn upon. When drawn upon, the image will be automatically converted to a drawing containing 5 individual layers (whereby the original image will occupy the middle, or third, layer). When the figure is saved, the drawing will be retained within the figure, inclusive of those layers (such that the layers may continue to be modified whilst animating).

But if you don't wish to start with an existing drawing, you can press the 'Drawing' button in the 'Add' panel to add a blank drawing to your figure, see right:

