

## Using Vector masks and clipping paths to remove backgrounds from bitmap images in Inkscape

Clipping and masking are methods for restricting what part of an object (or *Group* of objects) is visible. For clipping, a *clipping path* defines the visible part of the object while for masking, the *transparency* or *lightness* of one object determines the opacity of a second object. In both cases, the target object is not changed and can be unclipped or unmasked if needed.



Simple examples of clipping (top) and masking (bottom). The left column shows the text that serves as the clipping path and the text for masking, both overlaying blue rectangles that are the targets of the clipping and masking. In the right column are the results of the clipping and masking.

While **Inkscape** is primarily a scalable vector graphic editor and does not provide for editing of bitmaps you can import bitmap images (photos, scans etc) to use as design elements, textures and patterns.

**Masks and clipping paths** are very useful when you need to hide/remove backgrounds from bitmap image such as photographs or to create interesting designs and effects.



This photo has a mask of rectangles and text applied to create the grid effect shown.

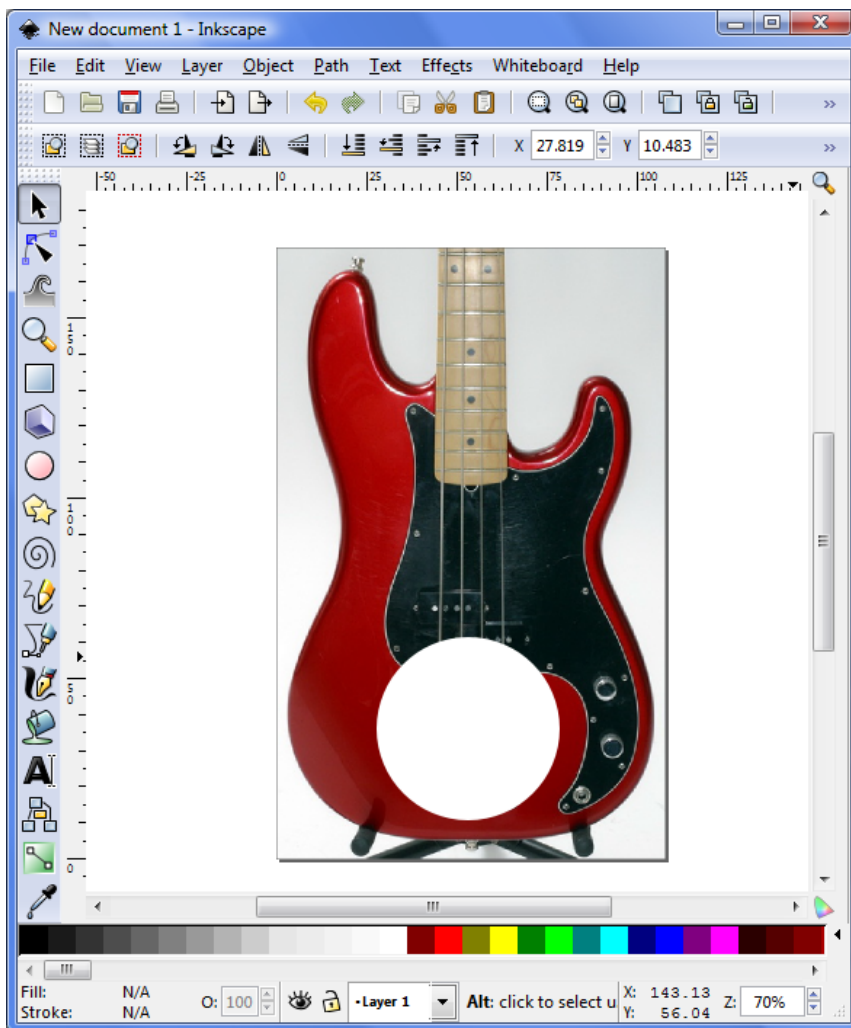
## Masking

Any object can be used to mask another object. The opacity and lightness of the mask determines the opacity of the masked objects. A masked object will be fully opaque only at places that are: inside the mask path, where the mask has maximum lightness (i.e., white), and the mask has maximum *Alpha*. So to summarize:

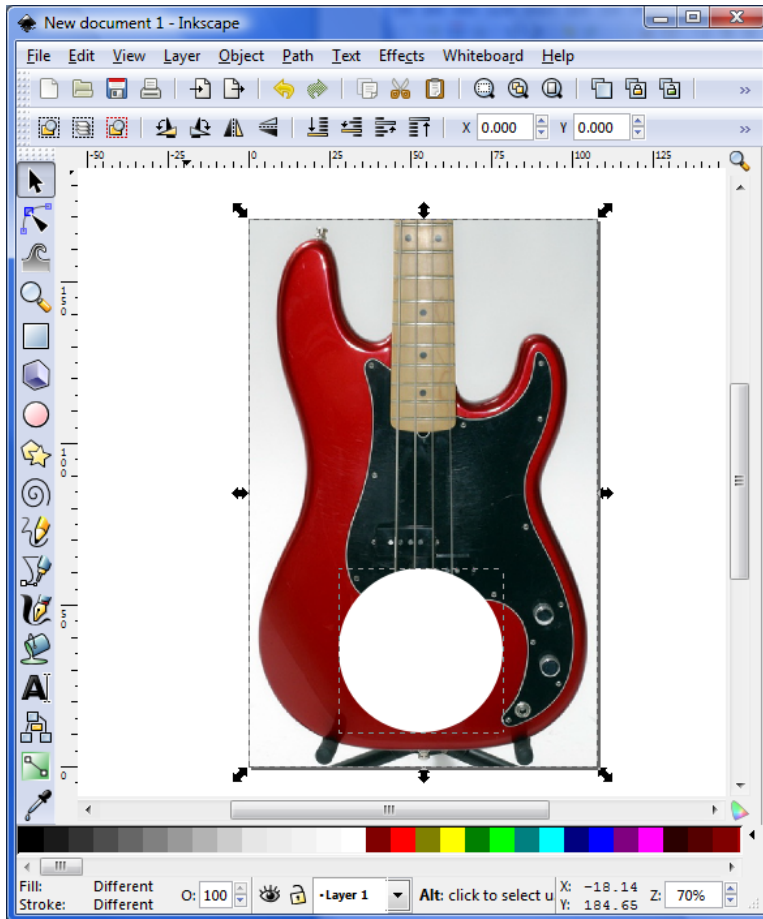
- Regions with minimum lightness (i.e., black) will be fully transparent.
- Regions with minimum *Alpha* (zero alpha) will be fully transparent.
- Regions outside the mask will be fully transparent.

All this sounds complex but in action it is quite simple:

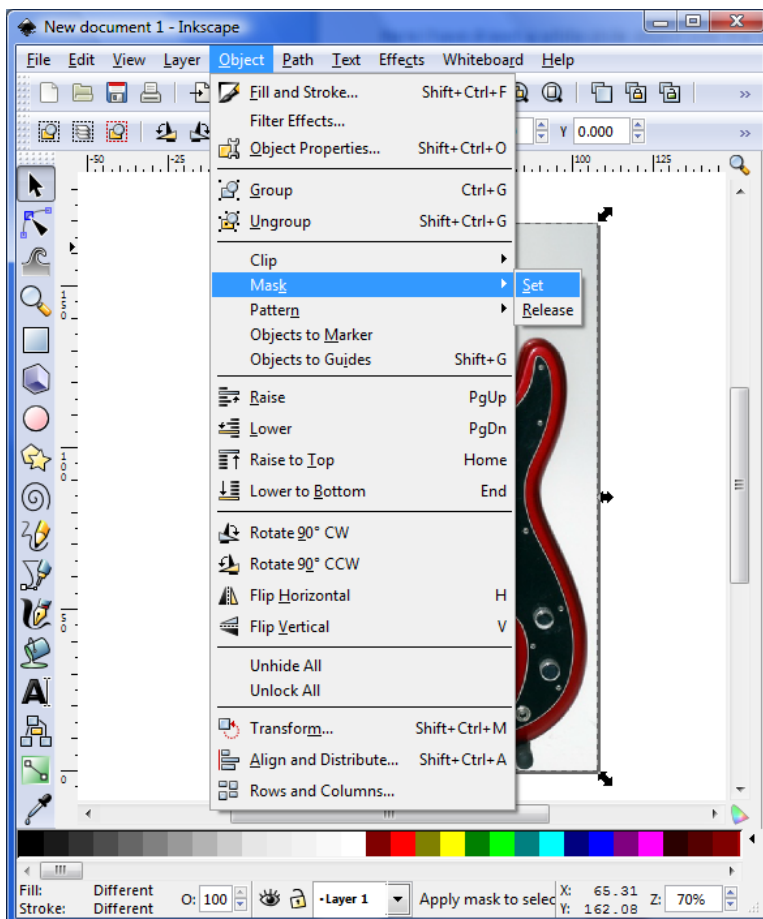
For example if you place a white circle over a bitmap image and then set the circle to mask the image, only the area covered by the white circle will be visible.



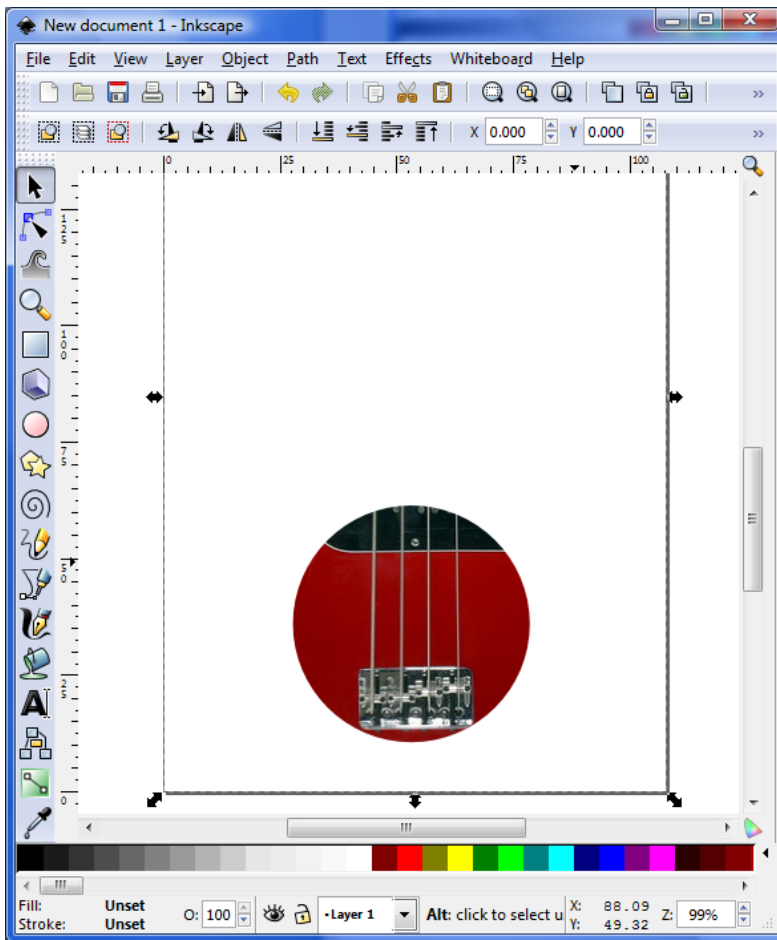
Here I have drawn a white circle object over the top of the picture. The circle is set with maximum opacity and lightness (pure white). I am going to use the circle to create a mask over the bitmap image.



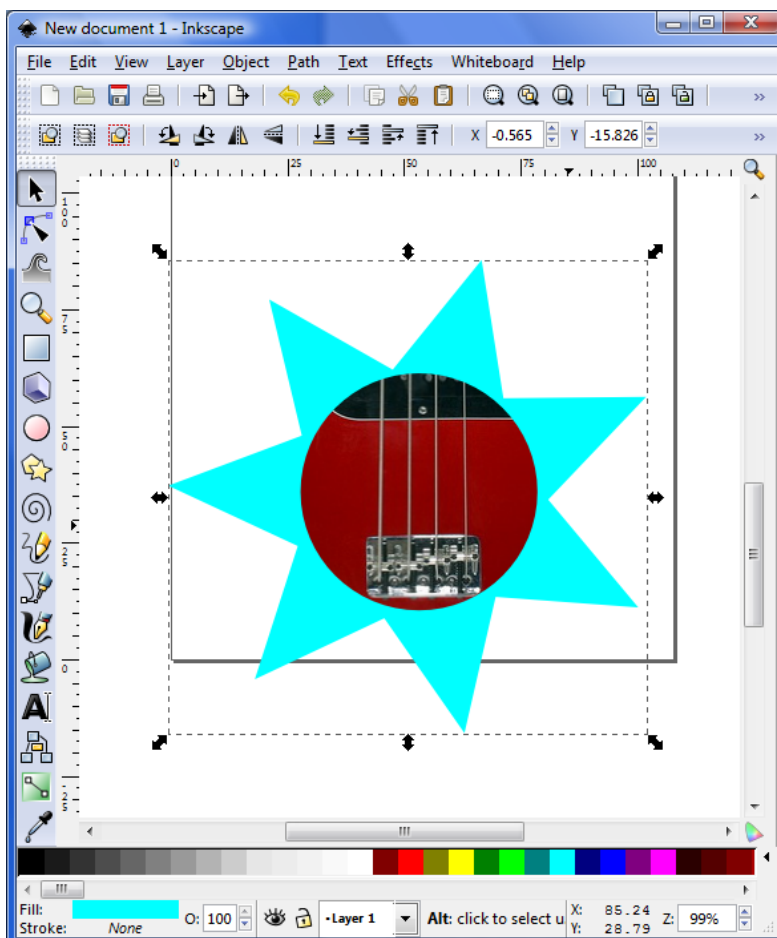
To create a masked image I need to make sure both objects are selected (shift+click to select multiple objects or click drag over both with the selection tool).



and then use **Object > Mask > Set** to create the mask

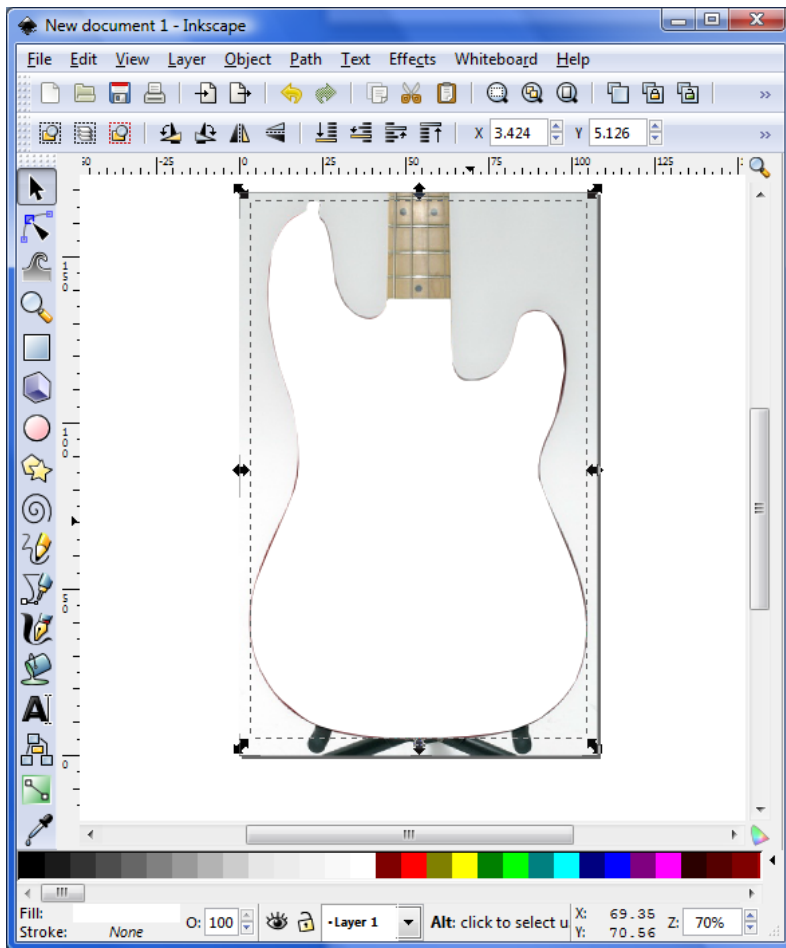


Once the mask is set only the area covered by the white circle is visible.



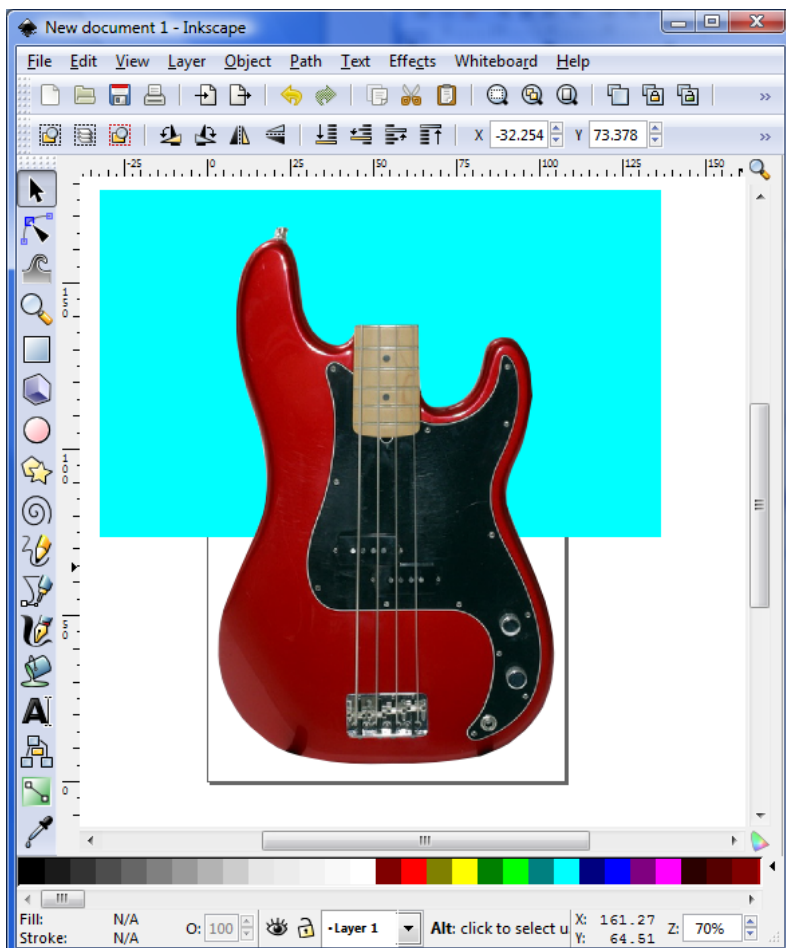
It's important to realise that the rest of the image is still exists and you can undo the mask by using **Object>Mask<Release** .

We have not cropped away any of the picture (like some photo editing software allows) just hidden the part we did not want to see. If I place an object behind the image mask it will be visible as the area outside the circle has been made transparent.



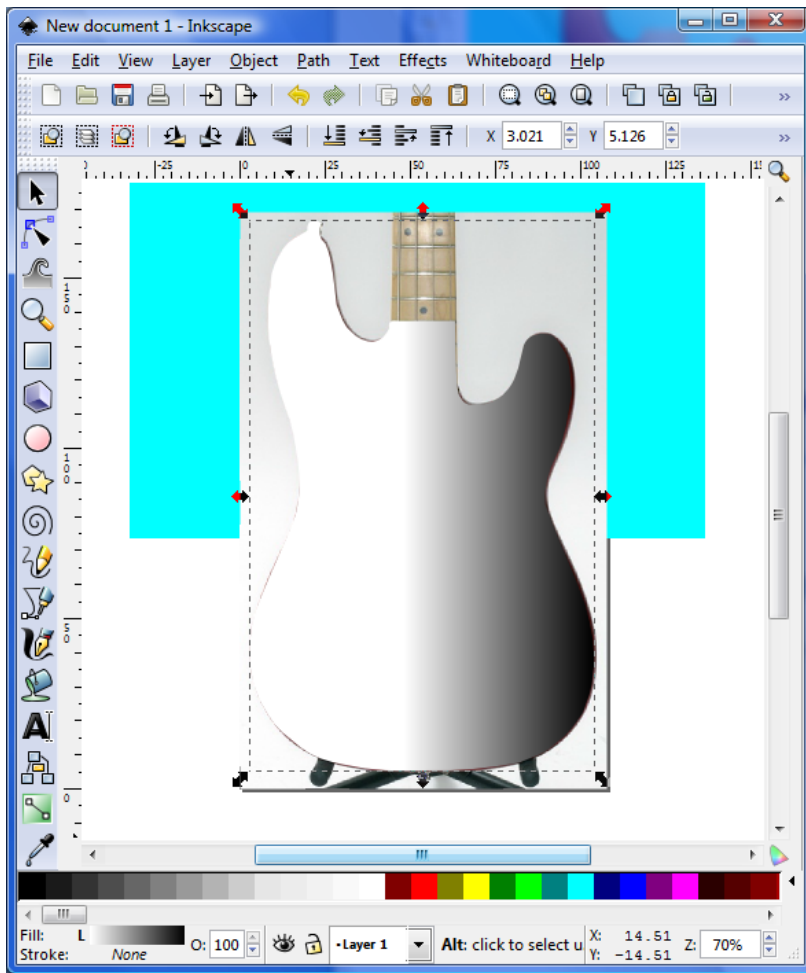
More complex masks can be created by using the Bezier pen tool to draw a custom shape and then making the fill on the shape white.

Tip: the more accurate you are in creating your mask the better the results will be :-) this one is a bit haphazard.....

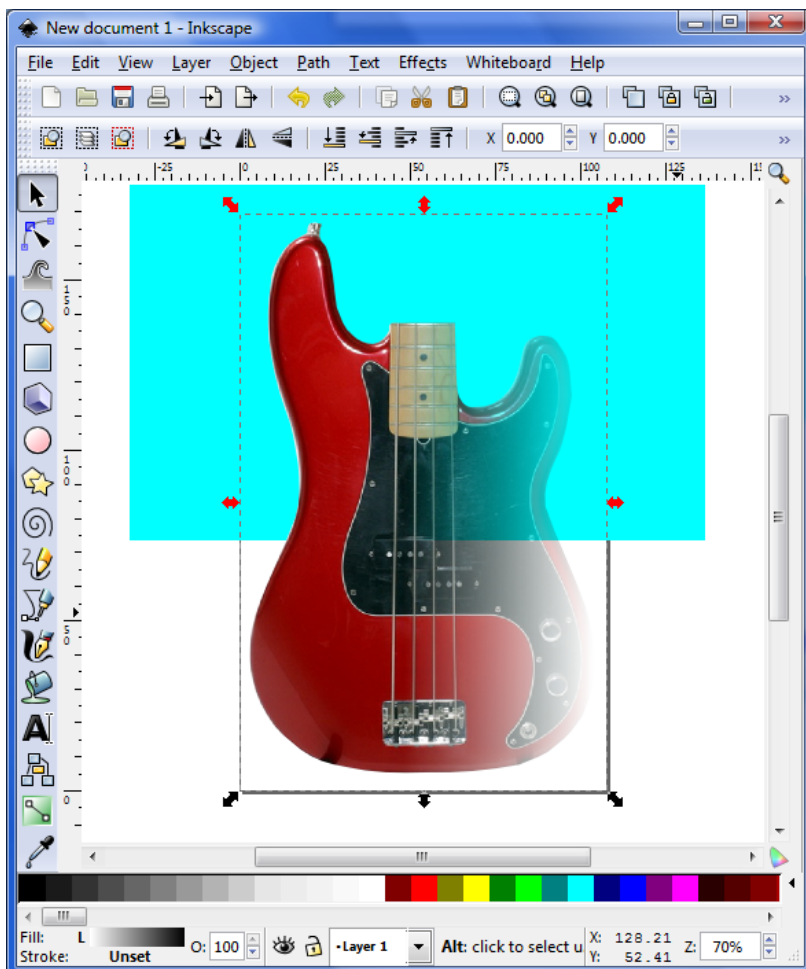


Here the custom shape has been set as a mask and a rectangle drawn behind the image to show the transparency.

Tip: Using a small amount of blur on your mask object will soften the edges of your final mask.



Using gradient fills on your masking object creates interesting effects. A white to black gradient will look as if the image is fading out.



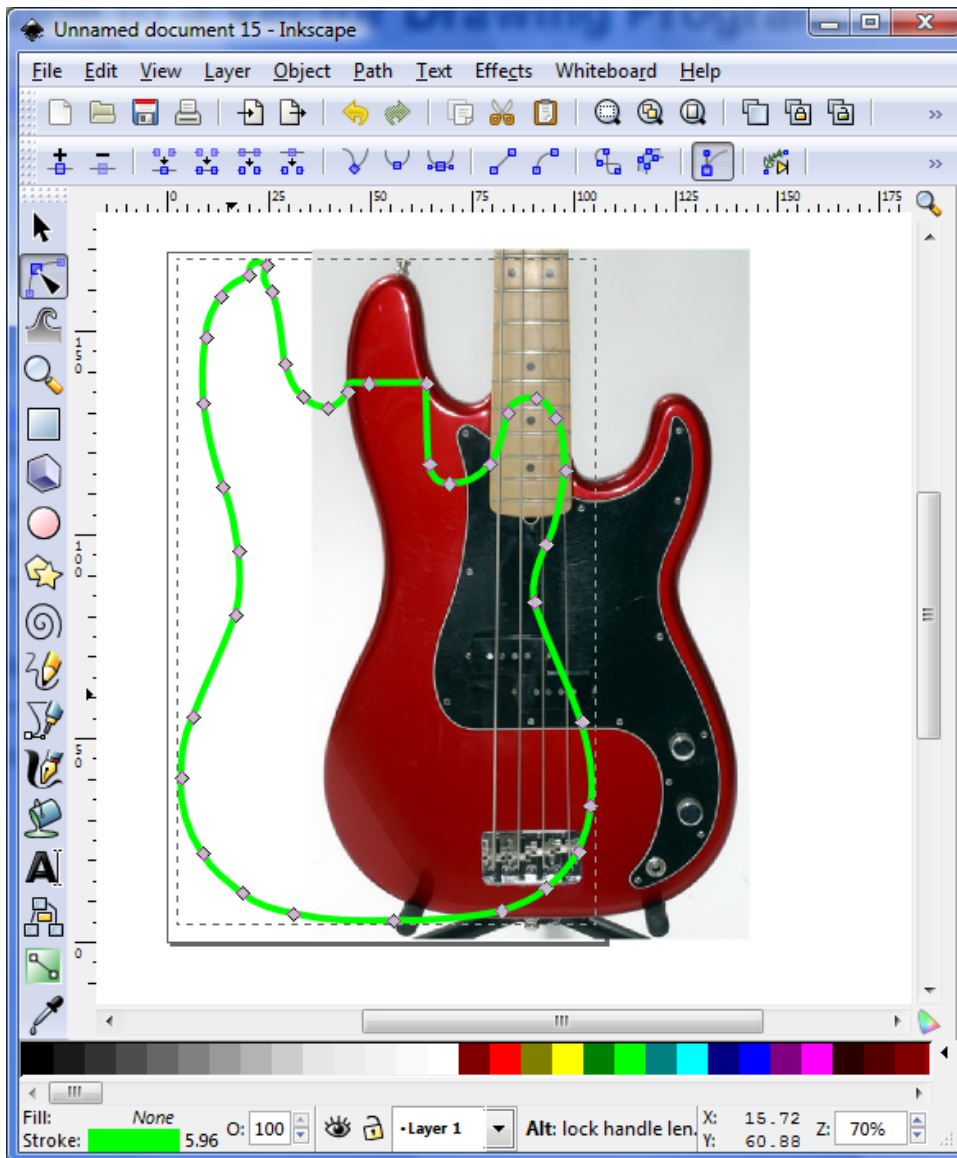


## Clipping

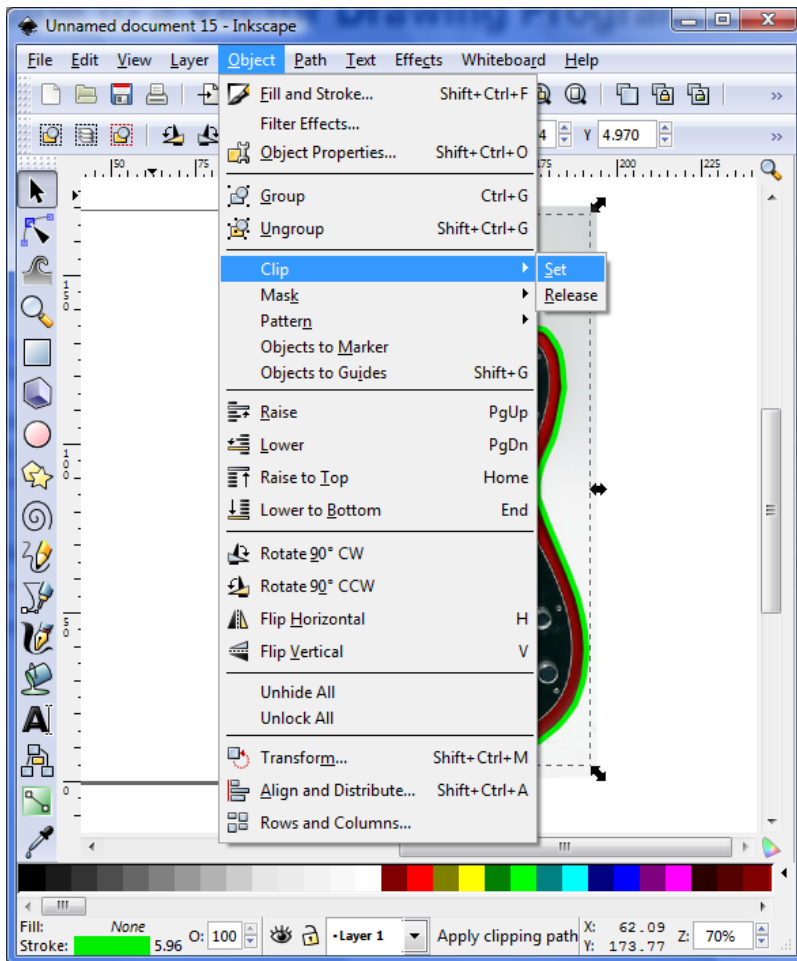
Clipping can be used to hide backgrounds just like a mask but uses the path or shape as a guide to set the border of the visible area.

Any path, regular shape, or regular text object can be used as a clipping path.

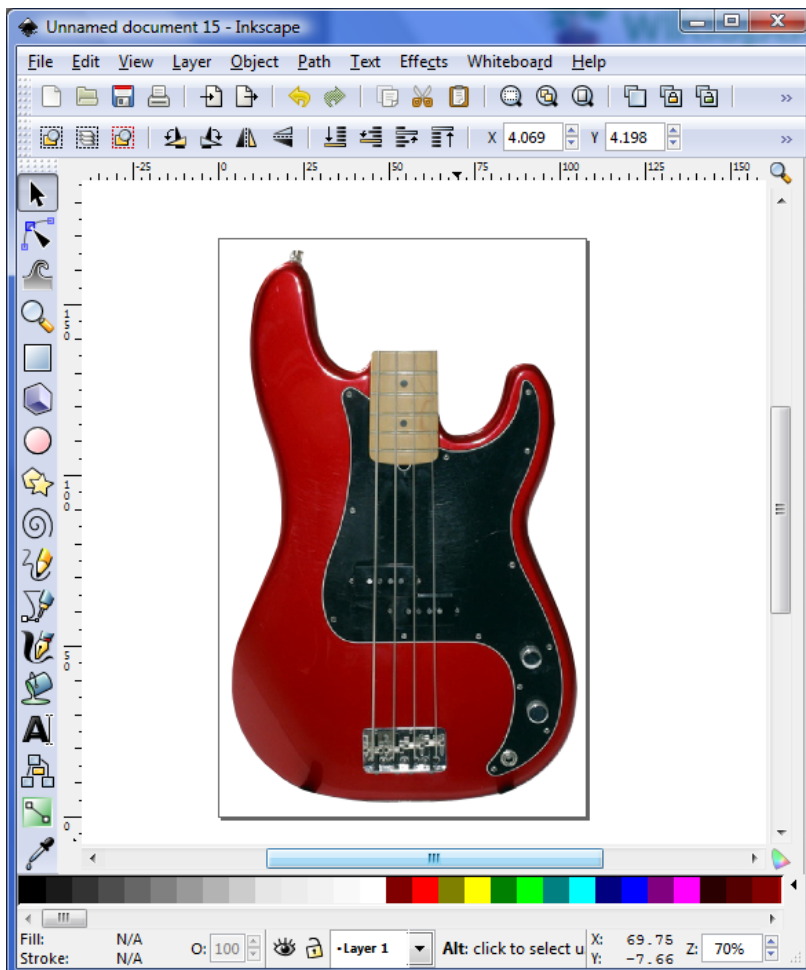
To clip an object (or **Group**), select both the object and the clipping path. The clipping path must be above the object to be clipped in **z-order**. Then use the **Object > Clip > Set** command. To unclip a clipped object, select the object and use the **Object > Clip > Release** command. The clipping path is then restored as a regular object, placed just above the formerly clipped object in **z-order**.



Here I have drawn the clipping path with the Bezier pen tool and then moved it to the left and exaggerated the stroke size and colour so that it is clearly visible



Make sure both the image and the path are selected and then use **object>clip>set** to create the clip.



The clipping path set makes all areas outside the bounding path transparent