

Instructions for Creating Scientific Mapping Program Templates

Templates for the CAMEOS Scientific Mapping program can be created from SVG (Scalable Vector Graphics format) files. Components of any image can be made interactive, allowing users to draw arrows and create flowcharts.

We recommend you use [Inkscape](#) to design templates, although there are other options, including [Adobe Illustrator](#) and [svg-edit](#).

Standard tools can be used to draw images, or an existing image can be imported into Inkscape. If you are using an existing image, you will create transparent ellipses to cover the parts of the figures that you want to be clickable.

1. Open the image you want to convert into a flowchart in Inkscape. Most common file formats are supported (JPG, PNG, PDF, etc.)
2. Inkscape will ask if you want to link or embed the image. Select **embed** and click **OK**.
3. Highlight the image in Inkscape. Black arrows will appear around the edge of the image when you have selected the image (Figure 1). Click on the **Edit** menu and select **Copy** (**Ctrl+C**).

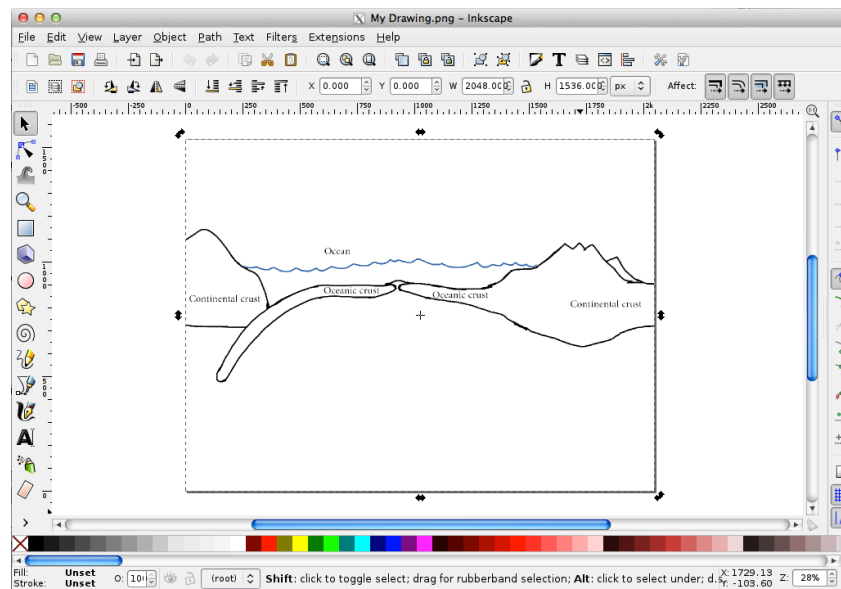


Figure 1. Highlighted image in Inkscape.

4. Under **File**, select **New**, and scroll down to the **Letter_Landscape** option. This will create a new Inkscape file with the correct dimensions for the Scientific Mapping Program.

5. **Paste (Ctrl+V)** your image into the new Inkscape file. Your image might be larger or smaller than Letter Landscape outline (Figure 2). Adjust the size of the image by dragging the corner of the image in or out to fit your image in the outline (Figure 3).

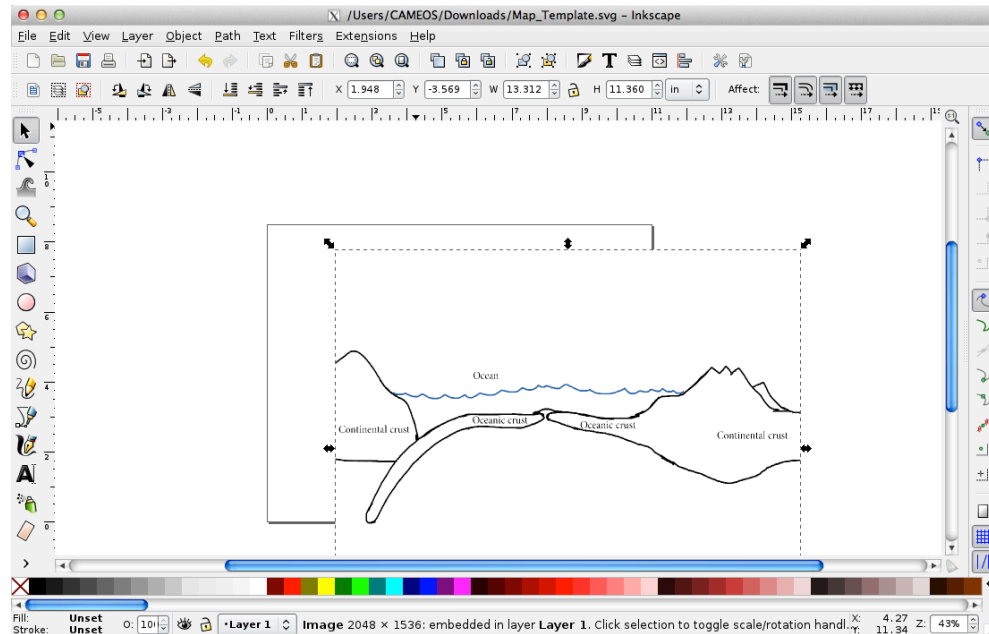


Figure 2. This image needs to be reduced to fit in the Letter Landscape outline.

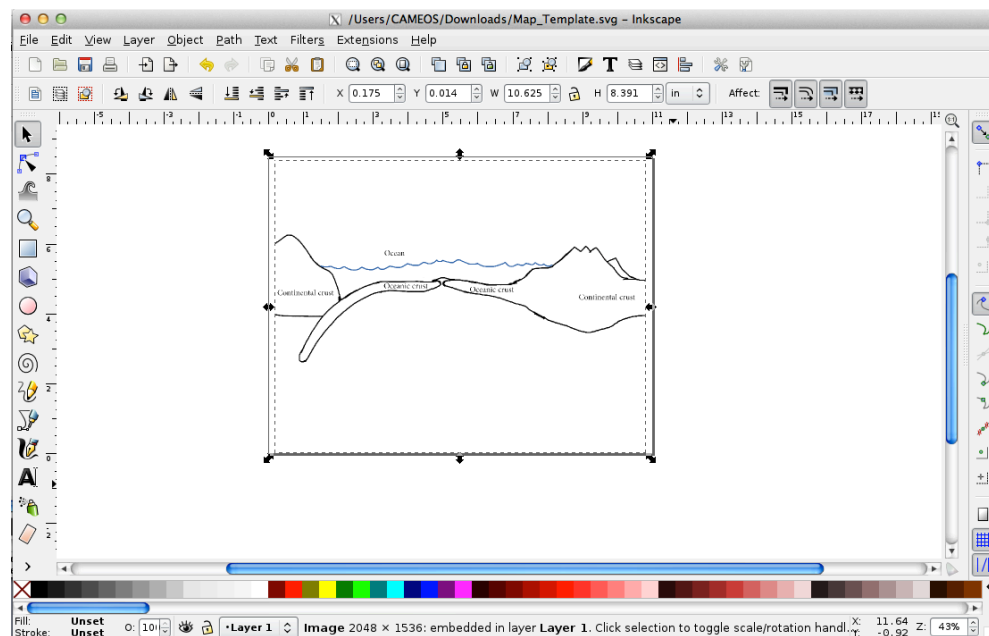


Figure 3. Image after it was resized and formatted to fit in the Letter Landscape outline.

6. Save and rename your file as an Inkscape SVG file.

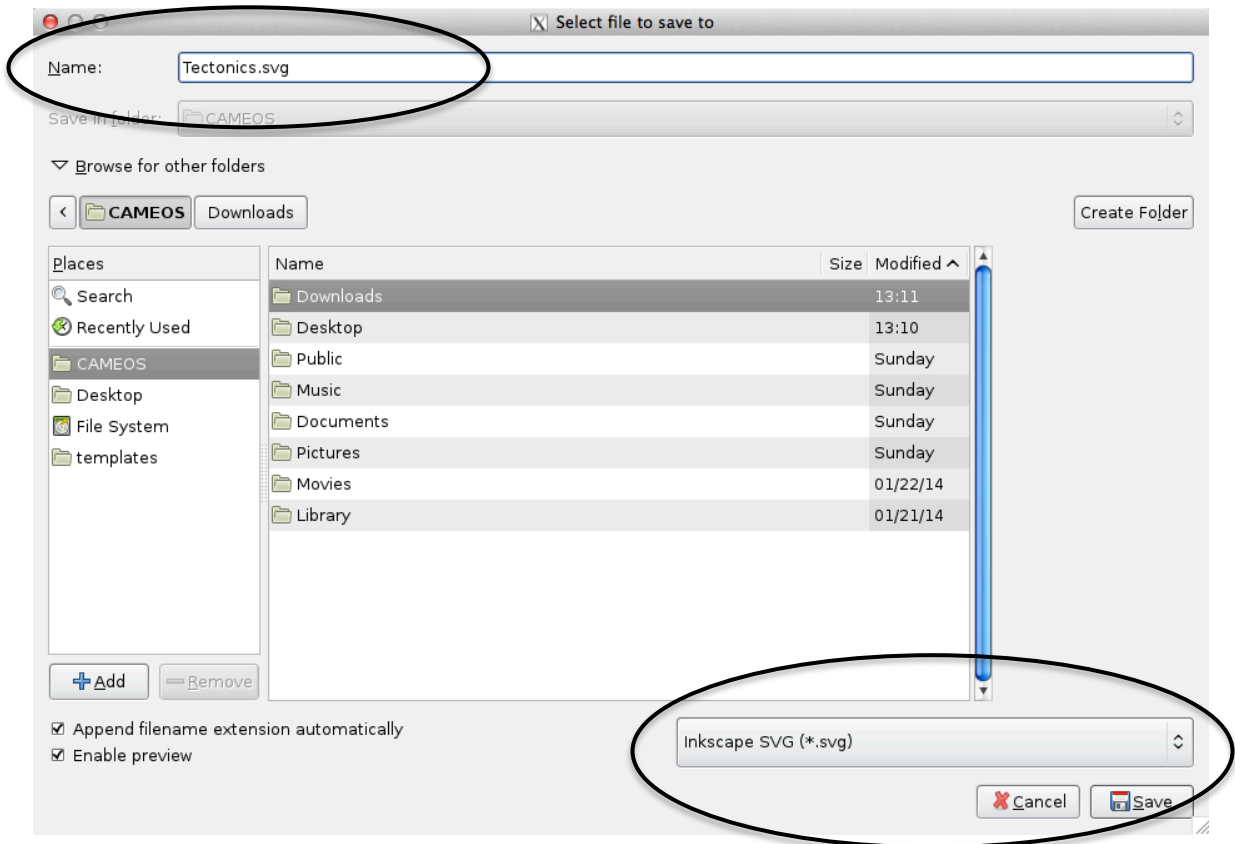


Figure 4. Rename the template file and save it as an Inkscape SVG file.

7. If you want to make changes to the image, you can draw or add text in Inkscape.
8. When done editing the image, you will create circles or ellipses to highlight the sections of the template you want to become “clickable” (active components of the flowchart).

The **Circle Tool** is on the left side of the Inkscape screen (Figure 5).

To edit the ellipses, click **Object** at the top of the screen and select **Fill and Stroke** (Figure 5). You can use any color and change the **Opacity** so the image is still visible through the ellipses. However, for the mapping program to recognize the ellipses, they **must have a Fill**, but a Stroke (outline) is not required.

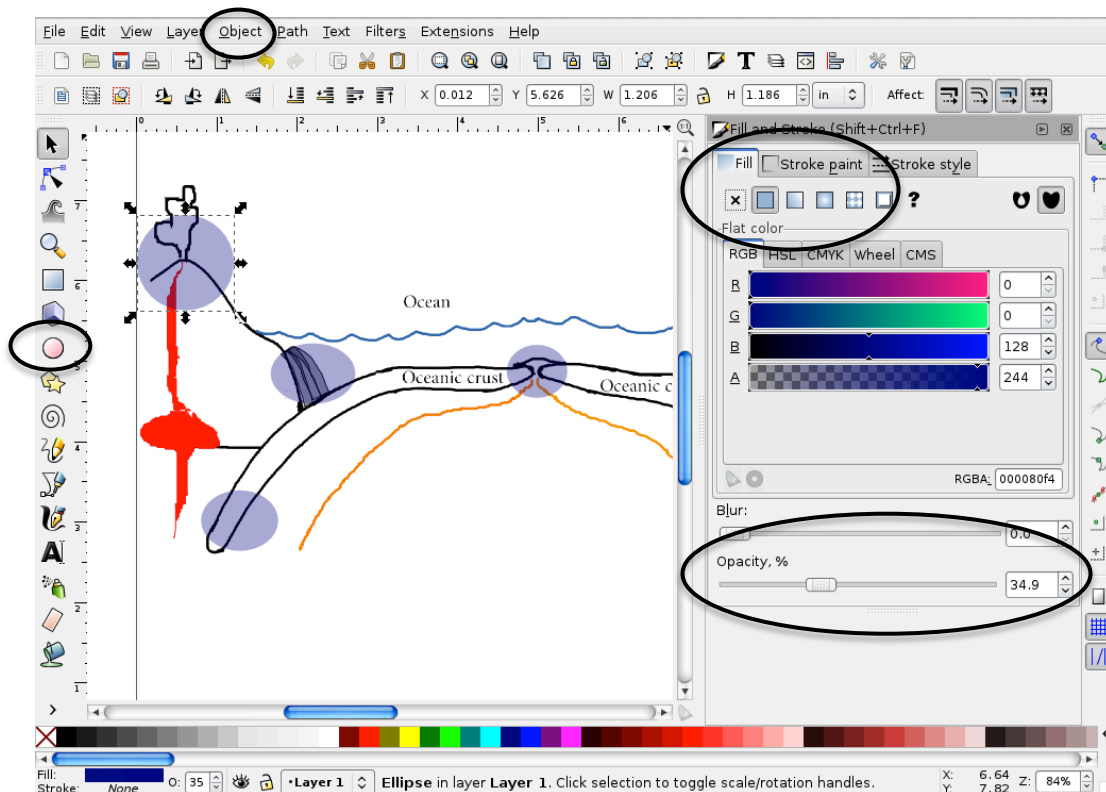


Figure 5. Use the **Circle Tool** (left) to create ellipses. Click **Object** (top menu) and select **Fill and Stroke** to edit the ellipses.

9. Each ellipse must be given an ID name. This name will allow the program to recognize the clickable components of the image. When the ellipses are clicked, the name you assign will appear in the list on the Notes and Photos Screen. Click **Object** at the top of the screen and select **Object Properties**. The Object Properties box will appear (Figure 6).
10. Click on one of the ellipses. At the top of the Object Properties box, there is a line that says "id" (identification), followed by a text box with text saying "path" followed by numbers. This is the identification that Inkscape assigns to the ellipses, but the ellipses can be renamed.
The notation for the IDs is:

n_(name of your choice)

After you enter a name, click the **Set** button. You do not have to re-open the Object Properties window for each one, just click on the new item to be named.

The "N" stands for node, because you are naming the nodes (clickable components) in your flowchart. Separate all words in the name with underscores. You can also leave the

name blank after the “n_” if you want students to identify components of the map as part of an exercise. The example below shows an ellipse labeled “n_Volcano.”

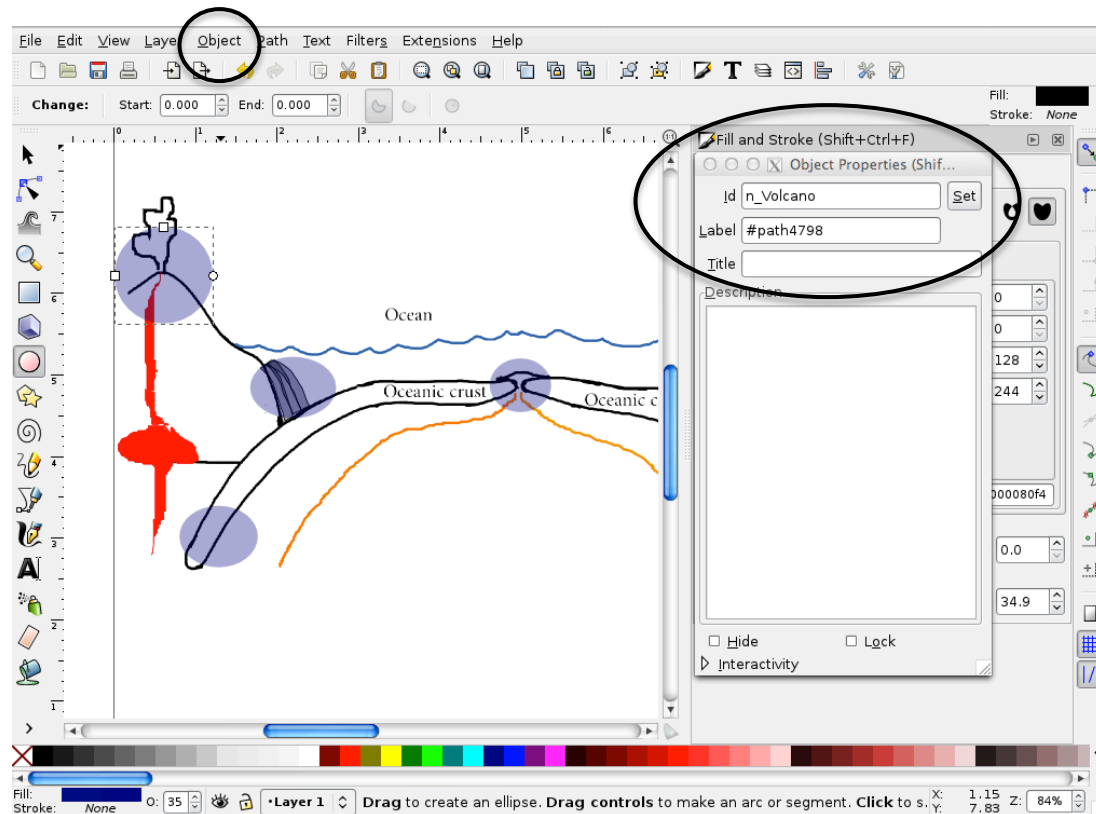


Figure 6. Editing names of ellipses using the Object Property Box.

11. **Save** and **close** your image in Inkscape. **Open** the image in **TextEdit** (for Mac) or **Notepad** (for PC). You will see the SVG file as an XML (**Extensible Markup Language**) text file.
12. Scroll to the very bottom of the text until you see this:
`</svg>`
13. **Copy** from this document the following XML tag:

```
<g id="ez-template" />
<g id="use_node_highlighting_to_disambiguate_start" />
<g id="highlight_edges_enabled" />
<g id="edge_group" />
```
14. **Paste** the tag just above the `</svg>` at the bottom of the document. **Save** your changes and **close** the file.

15. You can open your new template in the Scientific Mapping Program by clicking **Select From File** in the Select Template screen (Figure 7).

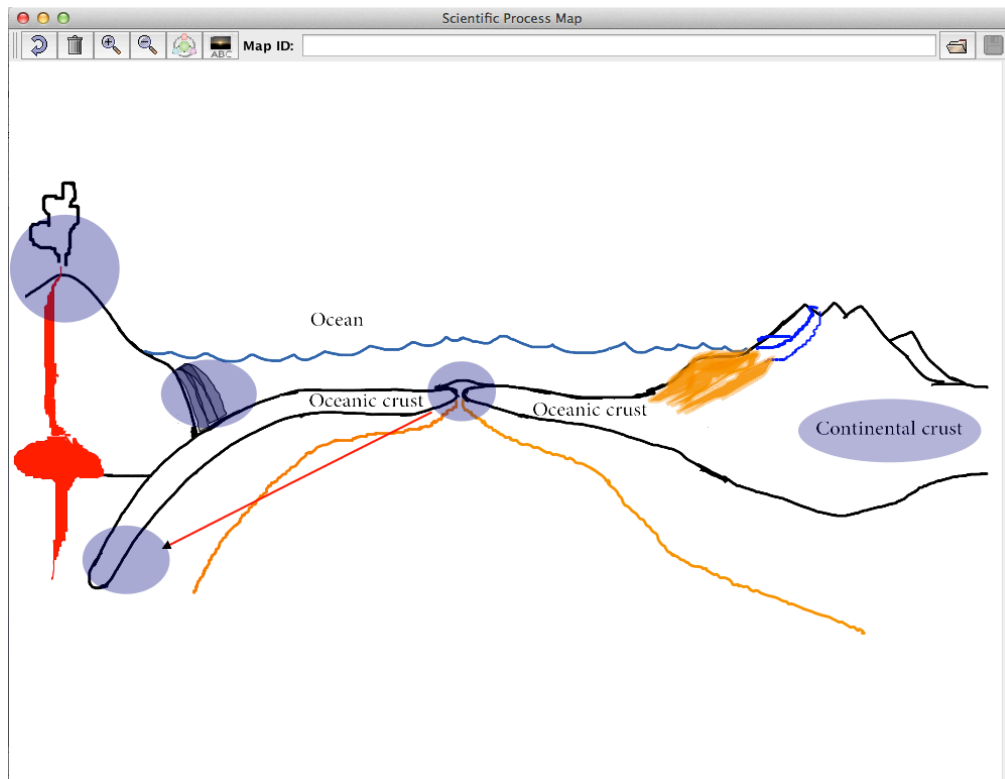
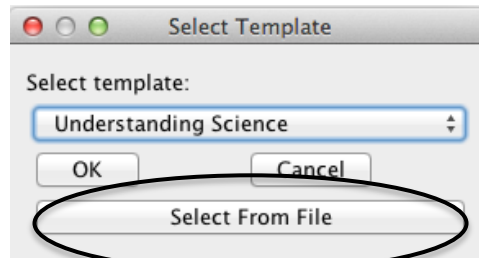


Figure 7. Finished templates can be loaded into the Scientific Mapping Program and displayed on the mapping screen.

Notes about SVG files and the Scientific Mapping Program:

1. Most images are pixel-based, while SVG files are vector-based. This means that SVG files will not 'pixelate,' or grow fuzzy upon zooming in. However, importing a bitmap image can lead to loss of image quality.
2. Flowed text, text that automatically flows between lines as needed, is not fully supported by the SVG handling software for the Scientific Mapping application. To make sure the text is compatible, highlight each textbox and select: Text->Convert to Text. View the template in a web browser to check that the text is still visible.
3. Each entity (line, text, shape, etc.) in a SVG file has a name that is automatically assigned. Remember that you need to rename parts of template that you want to be clickable in the Scientific Mapping Program (see steps 9 and 10 above).
4. If all you have is a single JAR file (the program), then you have a packaged version of the software. You need to get the source code to package a new template to the menu on the Select Template Screen.