

BEAUTIFYING BACTERIA

Bob is a microbiologist who is convinced he's discovered what actually causes people to age---a bacterium he refers to as, an-dropausalophile. Due to grant cuts, he no longer has portable microscope equipment to show his live findings in an auditorium setting. He's also no longer allowed to travel with live bacterium, without top secret government clearance each time. He's submitting his grant proposal to seek additional funding for this project. The plan is to use this information in the graduate research classes he teaches. It is possible that he may be asked to travel to three other universities to provide presentations on his findings.

Scenario

Bob would like to use software technology to create an onscreen interactive microscope. His primary focus will be on magneto photos of his specimens.

Files Used in this Exercise

Bacteria.zip (Win)

Objectives

After this exercise you will be able to:

- » Place an image into a Canvas document
- » Use the Oval tool to create a circle
- » Apply a lens effect to an object
- » Use scientific Colorize filter to colorize
- » Change the magnification of a lens
- » Lock an object
- » Resample an image by changing its resolution

Required knowledge to perform this exercise:

- » Open a file and change file types
- » Save a file
- » Use the Undo command
- » Move an object
- » Understand magnification
- » Understand pixels
- » Understand resolution

If at any time your document is not in the middle of the window, press SHIFT+F3 (Windows).

Narrative of this exercise

For this exercise, use the files found in the **Bactreria.zip** file (Win).





Begin by launching Canvas; notice that the Startup dialog appears by default. Place the **specimen.tif** and change the resolution from 600 ppi to 72 ppi. Align the image horizontally and vertically on the document so that it is centered and lock the image so it doesn't get moved accidentally. Draw a 1.5 inch circle where X=3.0 and Y=4.5. Use the SpriteEffects palette to make this circle into a lens, and increase the magnification to 300%. Colorize the lens with the following density percentages: 0-20 is blue, 20-40 is purple, 40-60 is green, 60-80 is pink, and 80-100 is yellow. Save the file as lens.cvx.

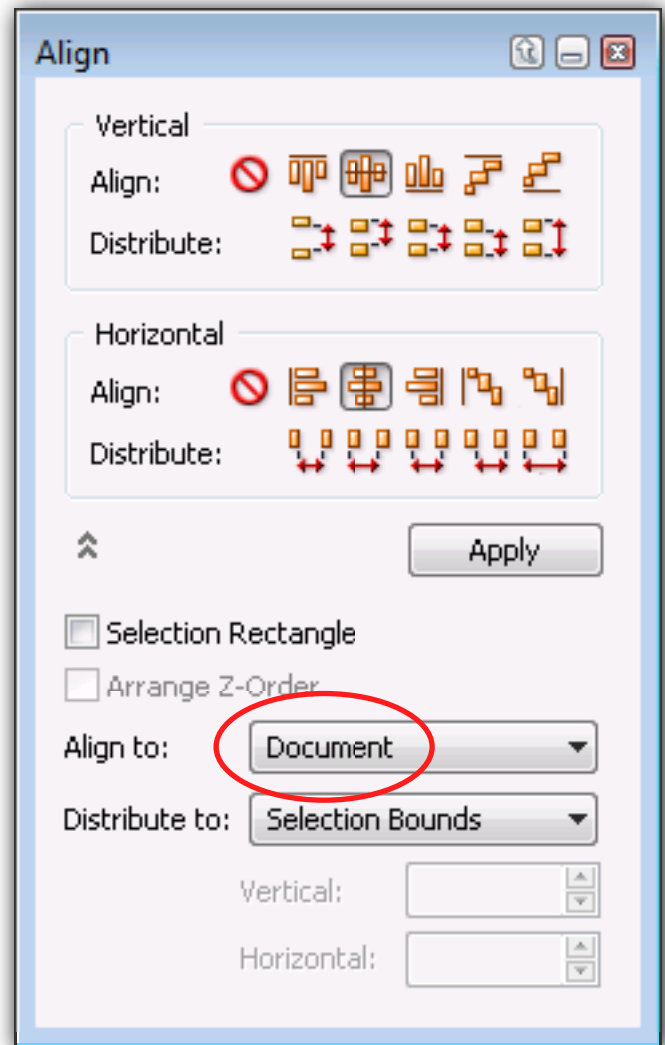
Files used in this exercise

Bacteria\specimen.tif




A sample end result to this exercise can be found in the **Bacteria** file: answer_lens.cvx

STEP 1: PLACE AND MANIPULATE THE BACTERIA IMAGE


- 1) Launch Canvas. Select an illustration document (8.5 X 11).
- 2) Choose File > Place. The Place dialog box appears.
- 3) Change Files of Type to TIF/TIFF.
- 4) Navigate to Bacteria\specimen.TIF and double-click the filename. The place pointer appears. 
- 5) Click the center of the document. The bacteria image appears at 600 ppi.
- 6) Type 72 in the Res text box and press Enter. The image is resampled to 72 ppi and appears larger. You may need to expand the Properties bar by clicking. 
- 7) Choose Object > Align > Show Palette. The Align palette appears.
- 8) From the Align to: options, select Document:
- 9) From the Vertical Align section, click .
- 10) From the Horizontal Align section, click .
- 11) Click Apply. The bacteria image is aligned vertically and horizontally on the document.
- 12) Close the Align palette.
- 13) Right-click (Windows) or Control-click (Mac) on the image. A shortcut menu appears.
- 14) Choose Lock.
- 15) Press Esc to deselect all objects.

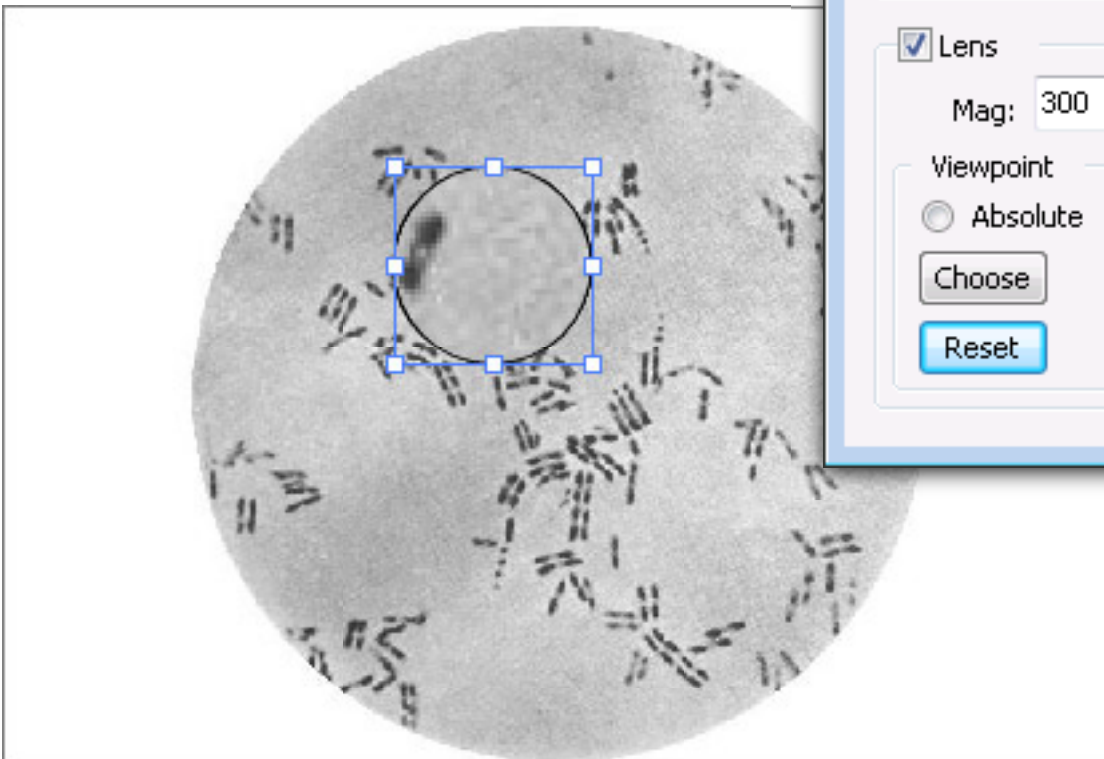
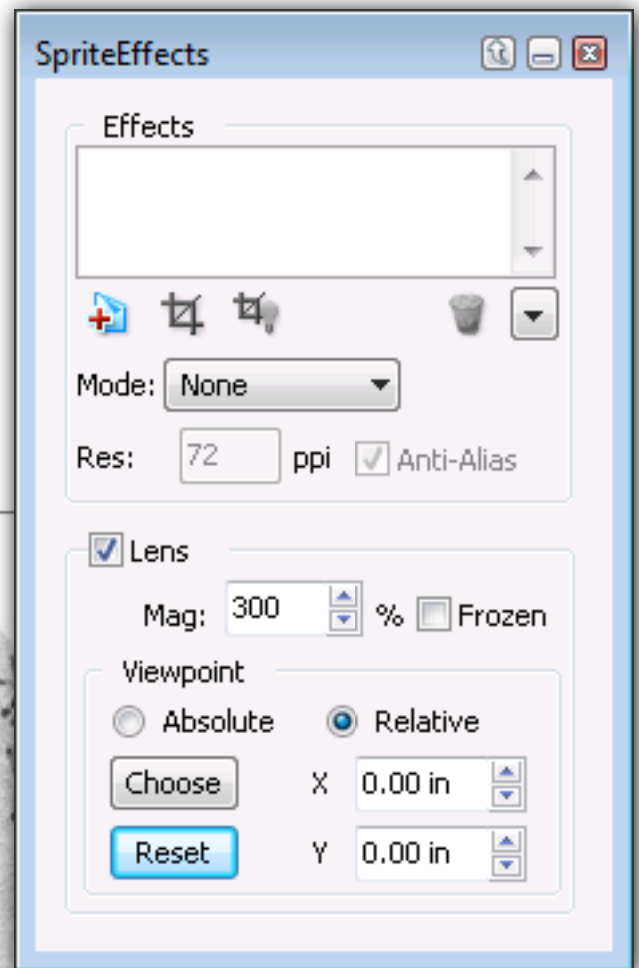


STEP 2: USE THE OVAL TOOL AND PROPERTIES BAR TO CREATE A CIRCLE

- 1) Press O. The pointer becomes a crosshair.
- 2) In the Properties bar, type the following:
 $X=3.000 =1.500$ 
 $Y=4.500 =1.500$ 
- 3) Choose the left-of-center. 
- 4) Click Create. A circle appears.

STEP 3: APPLY A LENS FILTER AND CHANGE LENS MAGNIFICATION

- 1) Click  in the Properties bar. The SpriteEffects palette appears.
- 2) Select the Lens checkbox.
- 3) Change the Mag to 300. Here is a sample of your project up to this point:



STEP 4: COLORIZE AN OBJECT

- 1) Click on "Apply a new filter effect" The New Effect dialog box appears.
- 2) Choose Scientific > Colorize.
- 3) Click OK. The Colorize dialog box appears.
- 4) Click A new color line item appears where Min=0% and Max=100%.
- 5) Type 0 in the From and 20 in To. Choose a shade of blue from Colors.
- 6) Click A new color line item appears where Min=0% and Max=100%.
- 7) Type 20 in the From and 40 in To. Choose a shade of purple from Colors.
- 8) Click A new color line item appears where Min=0% and Max=100%.
- 9) Type 40 in the From and 60 in To. Choose a shade of green from Colors.
- 10) Click A new color line item appears where Min=0% and Max=100%.
- 11) Type 60 in the From and 80 in To. Choose a shade of pink from Colors.
- 12) Click A new color line item appears where Min=0% and Max=100%.
- 13) Type 80 in the From and 100 in To. Choose a shade of yellow from Colors.
- 14) Click OK. A colorized lens appears. Close the SpriteEffects palette.
- 15) Use the arrow keys to slowly shift the lens. Notice the change in what is magnified.
- 16) Save the file as lens.cvx.

