## Draw and Edit a Circle in Bezier Mode

These exercises are taken from the Creating Fills and Lines chapter of the PREMIER $+{ }^{\text {TM }} 2$ Create Reference Guide for Mac®.

Use Bezier Mode to draw shapes with finely graduated curves. Control the exact shape of the line using the black handles to either side of the points you place. Click to place Corner points, or drag to place curve points with handles.

## Draw a Circle in Bezier Mode

I In the toolbar, click Hoop 0, and set the hoop to Universal, $100 \mathrm{~mm} \times 100 \mathrm{~mm}$ - Universal Square Hoop I.
2 Choose PREMIER $+{ }^{\text {TM }} 2$ Create $>$ Preferences and ensure that Grid size is set to 10 mm .
3 Select the Precise Create $\therefore$ toolbar.
4 Ensure that Fill and Appliqué are not selected (not highlighted).
5 Set the Line Type to Triple Stitch
6 Click Bezier Mode 7 , to select (highlight) it.

8 Move the pointer over the work area. The Bezier Mode pointer appears
9 Click to place a point, then click to place three more of these square points in a rough curve.
I0 Control-click and choose Finish drawing the line to finish the line. The points are joined by straight lines.
Note: These are Corner Points, in Bezier Mode they are joined by straight lines.
II Choose Edit > Undo Add Area to remove the line.
12 Starting 2 squares above the center of the hoop, drag to the right one square, to the crosshairs of the next grid square.
13 Release the mouse.
Note: A yellow square (a Point) appears at the place where you clicked, and a black handle appears at the place where you released the button. This is the forward handle.
14 Note that a second handle has appeared the same distance behind the yellow point.
Note: This is the backward handle, it is the same distance from the yellow point as the forward handle (it is symmetrical).


15 Starting 2 squares to the right of the center of the hoop, drag downwards one square, then release the mouse.
Note: A curved line appears between the two square points. The new point is yellow, and your original point is now white.

16 Starting 2 squares below the center of the hoop, drag one square to the left to place the next section of the curved line.
17 Then, starting 2 squares to the left of the center of the hoop, drag one square upwards to place another section of the curved line.
You should now have three quarters of a circle.
18 Move the pointer over the square white point on the right. The pointer changes to the Move pointer $A_{x}$.
19 Drag the point and place it exactly where the grid lines cross.


20 Move the pointer over the forward handle for that point (the black handle below the point that you just moved).
21 Drag the handle a short distance downwards. The backward handle for this point moves the same distance upwards.
Note: While you are still placing points, if you adjust the handles they behave symmetrically. You can also drag to add symmetrical handles to a Corner point.
22 Move the handle to the right and left.
Note: The curved line changes shape as you move the handle.
23 Move the forward handle so that both handles are over the cross hairs of the squares above and below the point, and so that the line between the handles runs along the grid line.
24 Adjust the other points and handles so that you have a smooth three quarters curve.
25 Control-click and choose Finish drawing the line to place the line.
26 In the FilmStrip, Control-click the Triple Stitch line that you
 just drew, and select Properties from the Context menu.
27 In the Line tab of the Fill Area and Line dialog, select (check) Closed Border, then click OK. The line becomes a circle.

## Edit a Bezier Line

28 In the toolbar, select Edit Points 的覴. The points and their handles are highlighted.
29 Move the pointer over the handle above the point on the right (the backward handle for the second point in the line).
30 Drag the handle a short distance downwards. This time the handle below (the forward handle) does not move, and the shape of the circle distorts.
Note: When editing a line the points are Smooth, and not Symmetric. The handles can be moved independently along the straight line.


31 In the Convert Points $\frac{100}{y}$ pop-up menu in the Control Panel, choose Convert Points to Symmetric $\boldsymbol{o n}^{\circ}$. Note: Edit Points $\boldsymbol{g}_{5}^{2 d}$ is no longer highlighted.

32 Move the pointer over the square white point whose handles you just changed. The pointer changes to the Convert Points to Symmetric pointer ${ }^{\text {. }}$.
33 Click on the point. The handles are symmetrical, and the shape you drew becomes a circle again.
34 Control-click and choose Finish Convert Points to Symmetric to deselect Convert Points to Symmetric.
Note: Edit Points is highlighted again.
35 Move the pointer over the handle above the point on the right and move it downwards. The handle below the point moves
 with the handle above the point.
Note: Using Convert Points to Symmetric locks the handles into Symmetric mode while editing.
36 In the Convert Points $\frac{\text { pox }}{\mathrm{y}}$ pop-up menu in the Control Panel, select Convert Points to Smooth $\boldsymbol{q}^{\circ}$. Edit Points is no longer highlighted.
37 Move the pointer over the square white point whose handles you just changed. The pointer changes to the Convert Points to Smooth pointer ${ }^{-1}$.
38 Click on the point.
39 Control-click and choose Finish Convert Points to Smooth to deselect Convert Points to Smooth. Edit Points is highlighted again, and you can now move the handles independently. Note: If you move a handle very close to its point and release the mouse, the handle will vanish. The section of the line without a handle becomes straight. Use Convert Points to
 Smooth to regain use of both handles.
40 In the Convert Points $\frac{\text { now }}{\square}$ pop-up menu in the Control Panel, select Convert Points to Corner $R$.
41 Move the pointer over one of the square white points in your line. The pointer changes to the Convert Points to Corner pointer ${ }^{\prime}$.
42 Click on the point. It now has no handles, and the sections of the line by it are straight. Note: There are no handles to drag, so you can only change the line by moving this Corner Point. Use Corner Points for straight lines.
43 Control-click and choose Finish Convert Points to Corner to deselect Convert Points to Corner, and then in the Convert Points pop-up menu select Convert Points to Smooth $\mathscr{\circ}^{\circ}$ and click that point again to return to handle adjustment.
44 Control-click and choose Finish Convert Points to Smooth to deselect Convert Points to Smooth.
Note: To create a corner point with full control over the angle of the lines, hold down Shift and click the point. You can then move the handles independently.

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