CHAPTER 3

WORKING WITH SHAPES

INFOCUS

WPL_V503

Drawings in Visio are based on shapes. ***Shapes*** are the objects you drag from a stencil and place on a drawing page.

Shapes themselves are like mini drawings. They have been created using the basic tools in Visio and have been placed in special files called ***stencils***.

The shapes in the stencils are referred to as ***shapes masters*** and these have certain intelligence built into them to dictate how they will look and behave when you place them on a page.

In this session you will:

- ✓ learn how to place shapes from stencils
- ✓ learn how to select shapes
- ✓ learn how to resize shapes
- ✓ learn how to move shapes
- ✓ learn how to duplicate shapes
- ✓ learn how to rotate and flip shapes
- ✓ learn how to change the order of shapes
- ✓ learn how to create a new shape from existing shapes
- ✓ learn how to group and ungroup shapes
- ✓ learn how to align shapes
- ✓ learn how to distribute shapes
- ✓ learn how to use snap and glue
- ✓ learn how to use the dynamic grid.

PLACING SHAPES FROM A STENCIL

All Visio drawings are made up of shapes. These may be as simple as lines or more complex like office furniture. The easiest way to add shapes to a drawing is to drag a shape from a stencil onto the page. From there, you can modify the shape as required. If you can't find the shape you need from the myriad of built-in stencils, you can draw it using the tools in the ***Tools*** group on the ribbon.

Try This Yourself:

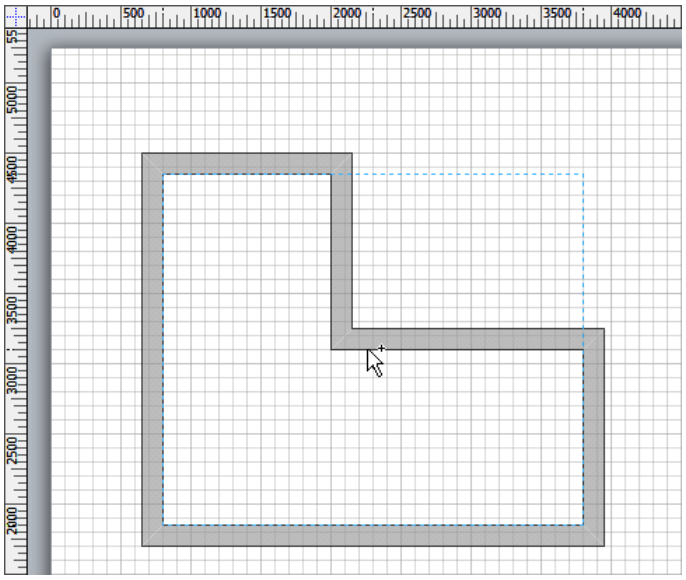
Open File *Before starting this exercise you MUST open the file V503 Working With Shapes_1.vsd...*

1. Click on the ***Walls, Doors and Windows*** stencil in the ***Shapes*** window to see its shapes
2. Hover over the ***"L" Room*** shape until the pointer appears as a four-headed arrow
3. Hold down the left mouse button and drag the shape onto the page
4. Release the mouse button to place the shape
5. Repeat the above steps to place the following shapes as shown

   Corner surface (Cubicles)
   Desk chair (Office Furniture)
   Telephone (Office Equipment)

   Things look a bit squishy at the moment, but you'll soon fix it

3



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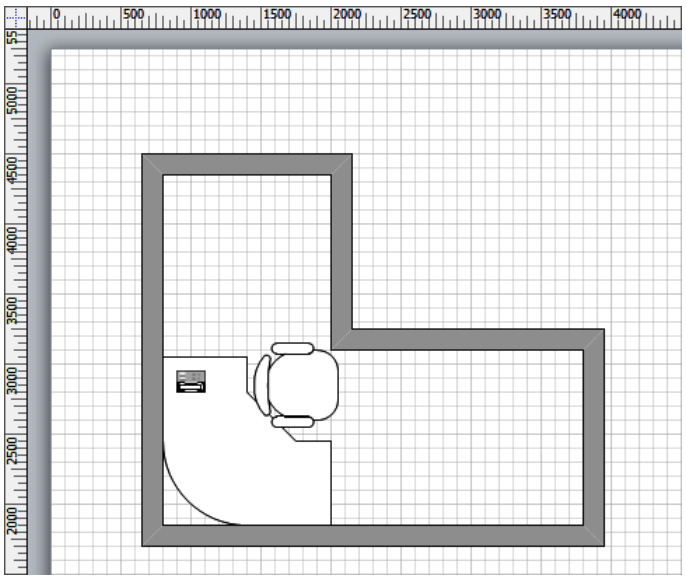

For Your Reference…

To place a shape from a stencil:

1. Locate the desired shape in the stencil
2. Click on and drag the shape onto the drawing page
3. Release the mouse button

Handy to Know…

- The shapes automatically snap to the grid lines as you drag them onto the drawing page. But this will only work if the ***Snap*** and ***Grid*** options are activated. To find these options, click on the ***dialog box launcher*** in the ***Visual Aids*** group on the ***View*** tab to open the ***Snap & Glue*** dialog box.

SELECTING SHAPES

Before you can do most things to shapes in a drawing – including formatting, moving, copying, rotating, resizing or aligning – you must first select the desired shapes. In Visio, you can select shapes one at a time using the ***Pointer*** tool which is selected by default, by area using the ***Area Select*** tool, with the ***Lasso Select*** tool, or you can select all shapes on the page.

Try This Yourself:

Same File *Continue using the previous file or open the file V503 Working With Shapes_2.vsd...*

1. Ensure the ***Pointer*** tool is selected in the ***Tools*** group on the ***Home*** tab, then click on the chair to select it
2. Press Ctrl and click on the telephone to select both the chair and phone

   Blue selection handles will appear and pink lines will appear around the individual shapes. Notice that the pink line is the darkest around the first shape you selected…
3. Click away from the shapes to deselect them, then click on ***Select*** in the ***Editing*** group and ensure the ***Area Select*** tool is selected
4. Hover above and to the left of the desk, then drag to create a selection net around desk, phone and chair
5. Press Esc to deselect the shapes, then click on ***Select*** in the ***Editing*** group and select **Select All**

   All shapes on the drawing page will be selected. You could have also used the keyboard shortcut Ctrl + A

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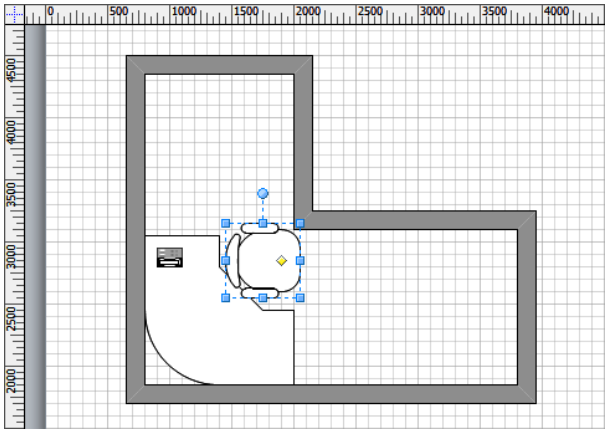

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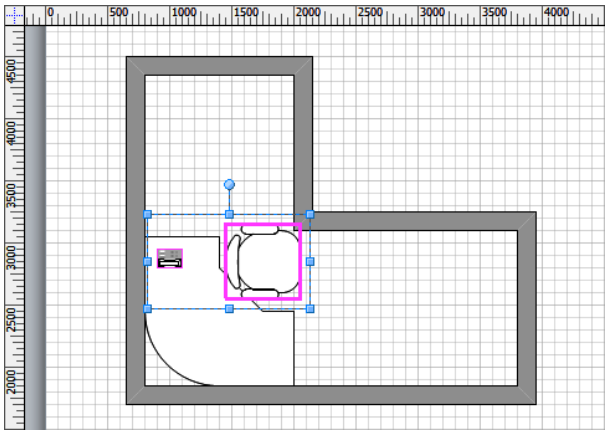

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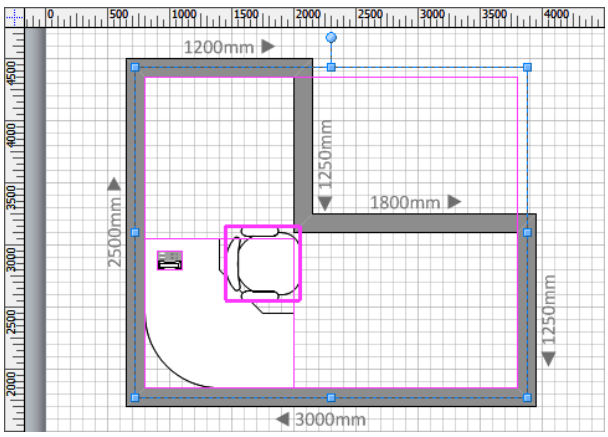


For Your Reference…

To select shapes:

- Click on a shape using the ***Pointer*** tool
- Press Ctrl or Shift and click on multiple shapes
- Click and drag a selection net around several shapes using the ***Area Select*** tool

Handy to Know…

- To deselect one shape when several are selected, press Shift and click on the unwanted shape.
- If you want to add a shape to a selection that you've created using the ***Area Select*** tool, press Shift or Ctrl and click on the shape.

RESIZING SHAPES

When you place shapes on a page, they will draw at a standard size. Occasionally you may find that the size is perfect, but more often than not you will have to resize them. You can resize a shape using the mouse by dragging a corner handle. Alternatively, you can resize a shape accurately by using the ***Size & Position*** window.

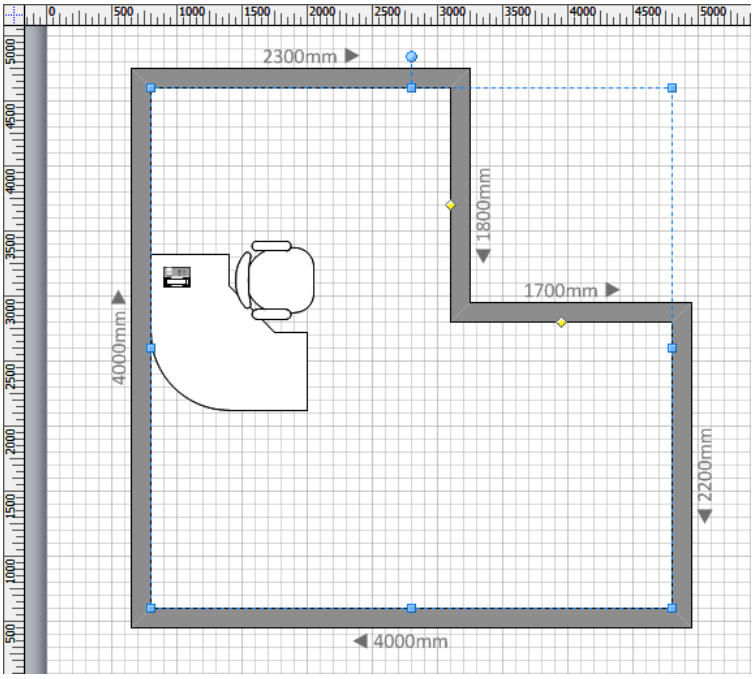
Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file V503 Working With Shapes_3.vsd...*

1. Click on the ***L Room*** to select it, then drag the bottom (or top) right corner handle down (or up) and to the right until the office is ***4000mm*** wide
2. Drag the middle bottom (or top) handle down (or up) until the office is ***4000mm*** high

   This shape has two yellow diamond handles. These let you reshape the shape…
3. Drag the higher yellow handle until the top wall is ***2300mm*** and then drag the lower yellow handle until the bottom vertical wall is ***2200mm***
4. Place a ***2 seat sofa*** (Office Furniture) at the right end of the office, then click on ***Width*** in the status bar to open the ***Size & Position*** window
5. Type **750**, press Tab, type **1500**, press Enter to resize the sofa, then click on ***close*** to close the ***Size & Position*** window
6. Drag the left-most yellow diamond handle to make the back of the sofa slightly thinner

3



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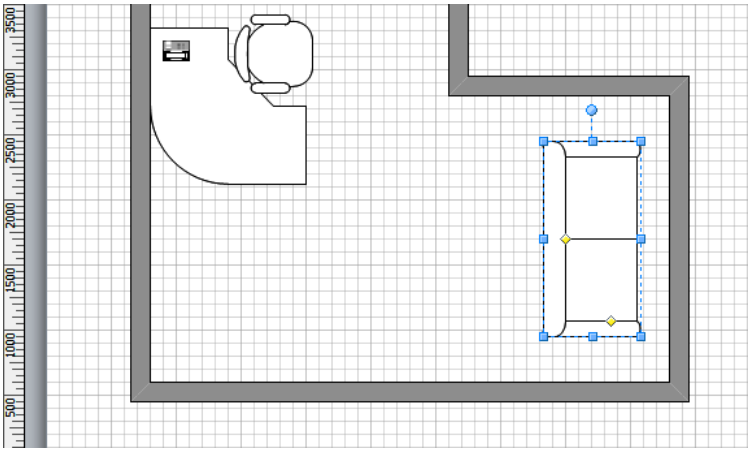


For Your Reference…

To resize a shape:

1. Click on the shape to select it
2. Drag a blue handle to the desired size, or

   Click on ***Width*** in the status bar to open the ***Size & Position*** window and alter the ***Width*** and ***Height*** as desired, then press Enter

Handy to Know…

- If you use the ***Size & Position*** window to resize shapes regularly, you should turn on ***AutoHide***. To do this, click on ***Turn On AutoHide*** in the ***Size & Position*** window. This window will then automatically display when you click on a shape and will minimise when all shapes are deselected.

MOVING SHAPES

As you build your drawing, you may find the need to move one or more shapes. You can move shapes using either the mouse or the arrow keys on the keyboard. The mouse is useful for moving shapes larger distances, such as moving them into approximately the correct position, and the arrow keys are useful for making smaller moves, such as nudging a shape to locate it accurately.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file V503 Working With Shapes_4.vsd...

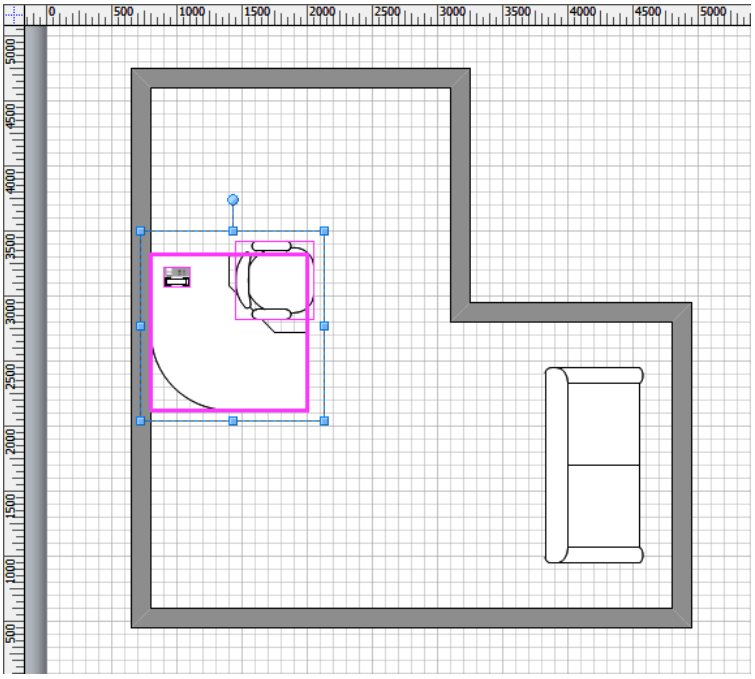
1. Hover above and to the right of the desk chair, drag a selection net around the chair and desk, and then release the mouse button to select the shapes (including the telephone)

   Notice that all three of the shapes are surrounded by the pink selection lines…

2. Hover over the centre of the selected shapes until the pointer changes to a four-headed arrow, then drag the shape down to the bottom left corner of the office

3. With the shape still selected, use the arrow keys on your keyboard to nudge the workstation so that it is positioned slightly out from the office corner

1



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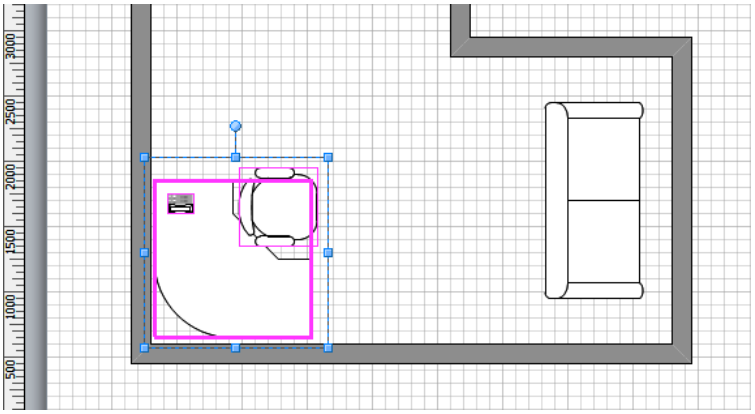


*Tip: You can move a shape to an exact X and Y co-ordinate based on the ruler measurents. Select the shape and open the **Size & Position** window by clicking on **Width** in the status bar, then type the desired values in **X** (horizontal ruler) and **Y** (vertical ruler).*

For Your Reference…

To move a shape:

1. Select the shape/s
2. Drag and drop in the new location

   or

   Press ↑, ↓, →, or ← to nudge the shape/s into position

Handy to Know…

- To constrain the movement of the shapes to vertical or horizontal, hold down Shift while dragging the shapes.
- To move the shapes to another page in the drawing, drag the shapes to a page tab.
- To move a selected shape by ***1 pixel***, hold Shift and press an arrow key.

DUPLICATING SHAPES

When you are building a drawing, you may often find that you need the same shape over and over again. Rather than placing it multiple times by dragging it from the stencil, you can duplicate it.

And what's even better, duplicating a shape makes an exact copy of the selected shape/s including all formatting, text content and other properties of the shape.

Try This Yourself:

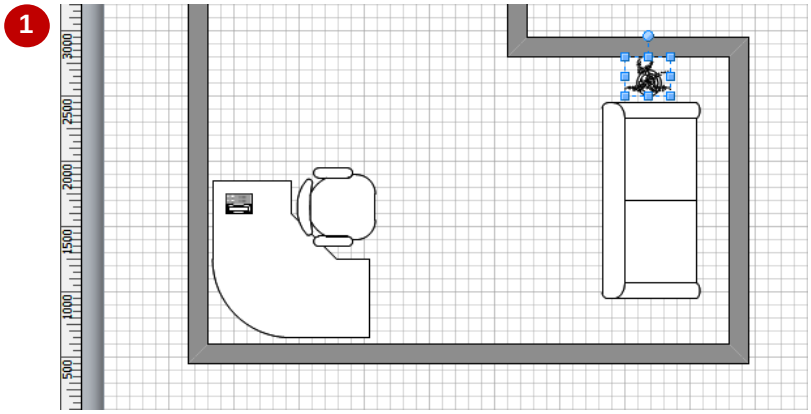
Same File

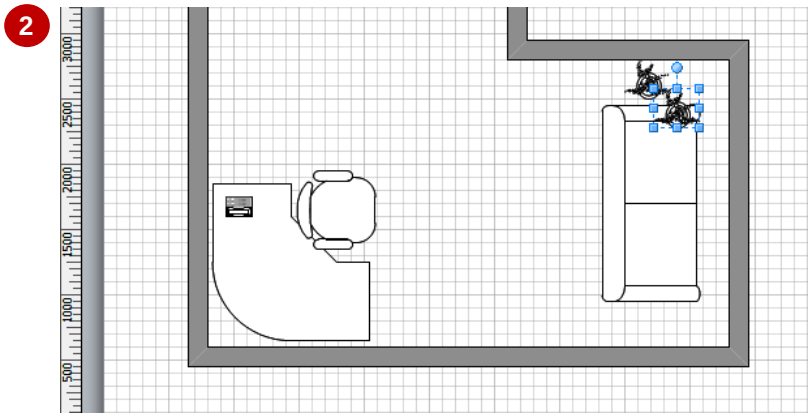
Continue using the previous file with this exercise, or open the file V503 Working With Shapes_5.vsd...

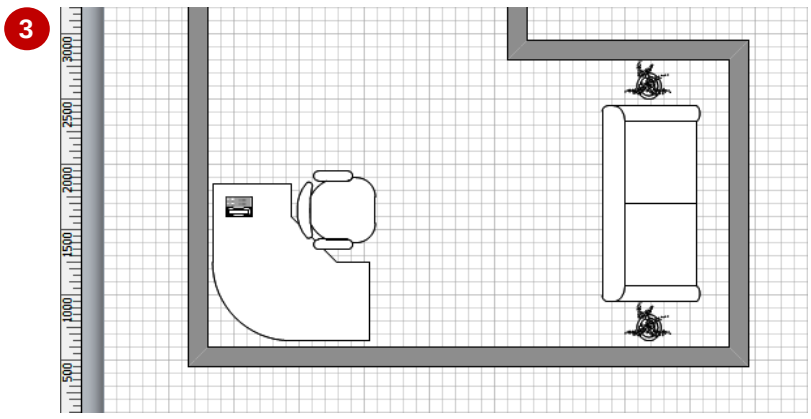
1. Place a ***Small plant*** from the ***Office Accessories*** stencil between the wall and the sofa, as shown
2. Press Ctrl + D to duplicate the selected shape

   Because this keyboard shortcut tends to be a standard Office shortcut, Visio does not include a Duplicate tool on the ribbon…
3. Move the duplicated plant to the position as shown, then deselect the shape

   With Snap enabled, it is very easy to ensure you position both plants at approximately the same distance from the walls







For Your Reference…

To duplicate a shape:

1. Select the shape/s
2. Press Ctrl + D

Handy to Know…

- You can also use ***copy*** and ***paste*** to duplicate shapes. These tools are found in the ***Clipboard*** group on the ***Home*** tab.
- You can duplicate more than one shape at once simply by selecting them and then applying the duplicate command.

ROTATING AND FLIPPING SHAPES

When you place shapes on the drawing page, they will appear with a default angle of rotation. When this angle is not the angle you desire, you can quickly rotate a selected shape free-hand using the mouse and rotation handle or very accurately using the ***Size & Position*** window. You can also flip a selected shape either vertically or horizontally using the ribbon.

Try This Yourself:

Same File *Continue using the previous file or open the file V503 Working With Shapes_6.vsd...*

1. Click on the sofa, then click on ***Position*** in the ***Arrange*** group and select **Rotate Shapes** > **Flip Horizontal**
2. Click on the chair to select it, then hover over the rotation handle at the top of the shape
   The pointer will appear as a rounded arrow…
3. Click on and drag the rotation handle down until the chair is facing into the desk
4. Place a ***Door*** (Walls, Doors and Windows stencil) at the right end of the top horizontal wall
5. Click on ***Angle*** in the status bar to open the ***Size & Position*** window, type **180** and press Enter, then close the window
6. Repeat step ***1*** to flip the door horizontally, then drag the yellow handle to reduce the swing angle of the door
7. Place a ***PC monitor*** and ***Keyboard*** (Office Equipment stencil) on the desk and using one of the above rotation methods, rotate them ***45°***

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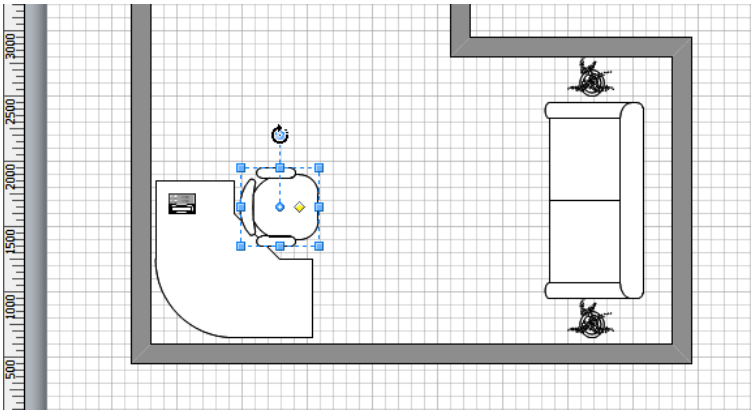
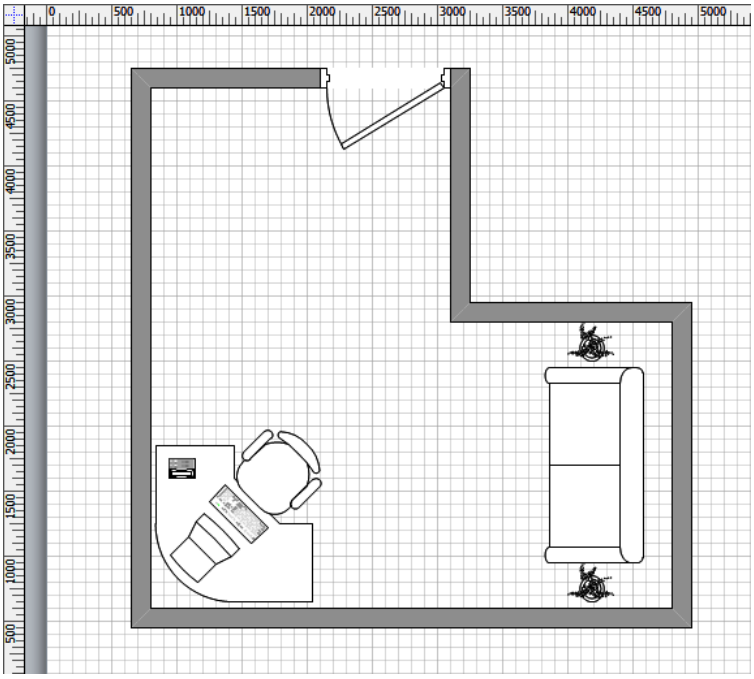


The further you move the cursor from the selection while dragging the rotation handle, the finer the rotation increments to which the shape will snap.

7



For Your Reference…

To rotate a selected shape:

1. Drag the rotation handle or click on ***Angle*** in the status bar and alter ***Angle*** as desired

To flip a selected shape:

1. Click on ***Position*** in the ***Arrange*** group and select **Rotate Shapes** > **Flip Horizontal** / **Flip Vertical**

Handy to Know…

- You can rotate a selected shape in 90° increments by clicking on ***Position*** in the ***Arrange*** group and selecting **Rotate Shapes** > **Rotate Right 90°** / **Rotate Left 90°**.
- When you rotate a shape using the rotation handle, the shape will snap to specific angles, such as 15°, 30°… or 10°, 20°… etc.

ORDERING SHAPES

When you place shapes on a page, they are applied in the order in which you place them where the first placed shape is lowest in the stacking order and the most recently-placed shape is at the top of the stacking order. So, if you move the first shape that you placed on top of the final shape that you placed, areas of the first shape will be hidden by the final shape where it overlaps.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file V503 Working With Shapes_7.vsd...

1. Move the chair so that it appears tucked realistically under the desk

   Because we placed the chair after the desk, the chair is overlapping the desk. To make this drawing realistic, we need to send this shape down or backwards in the stacking order…

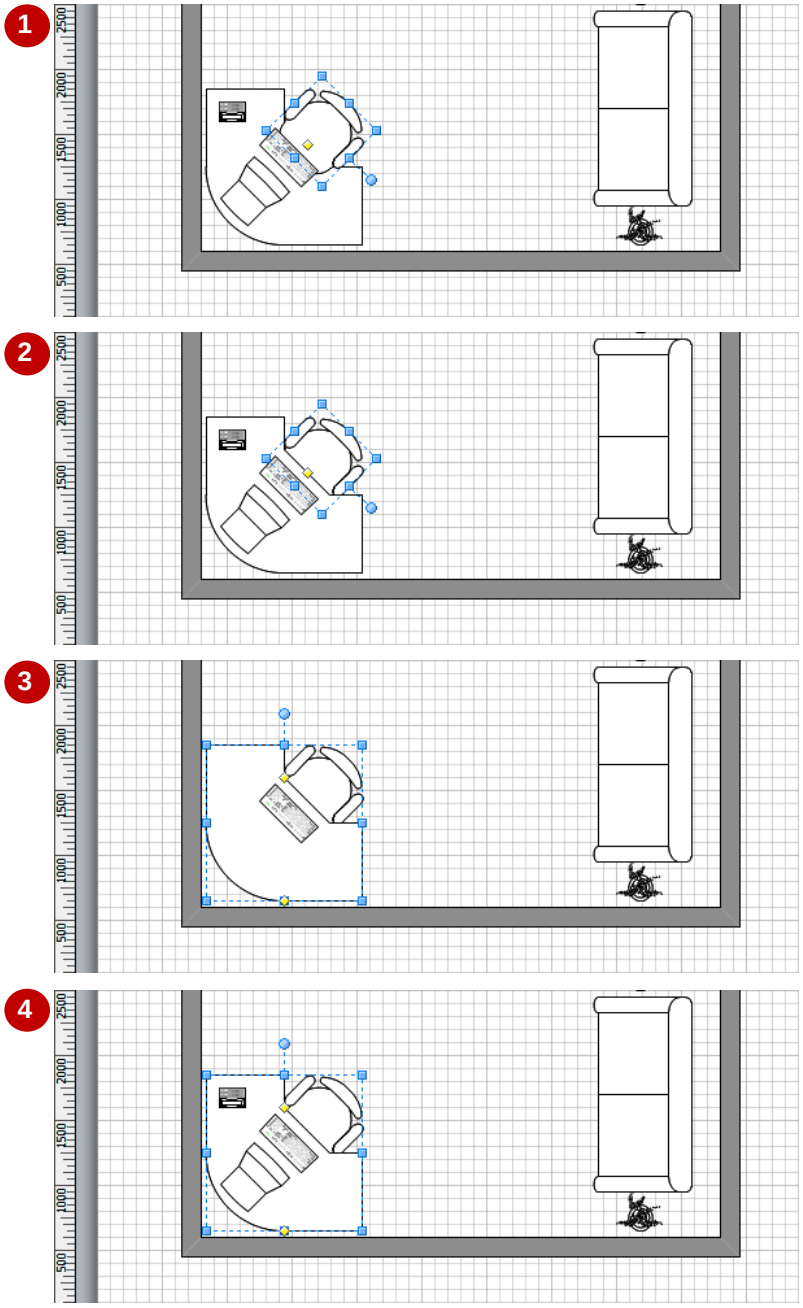
2. Click on ***Send Backward*** in the ***Arrange*** group

   If the chair happened to be 'sitting' on top of both the desk and the keyboard, you could have either clicked on Send Backward twice to move it down two layers or you could have clicked on Send to Back. You can also move shapes up in the stacking order…

3. Click on the desk and then click on ***Bring Forward*** twice

   You can see only the keyboard now…

4. Click on ***Send Backward*** twice to correct the shapes



For Your Reference…

To change the stacking order of a shape:

1. Click on the shape
2. Click on ***Send Backward*** or
   Click on ***Send to Back*** or
   Click on ***Bring Forward*** or
   Click on ***Bring to Front***

Handy to Know…

- If you are organised enough, you may be able to place your shapes so that their stacking order is correct.
- ***Send Backward*** and ***Bring Forward*** move a shape one step at a time, while ***Send to Back*** and ***Bring to Front*** move a shape to the bottom or the top of the stack.

MERGING SHAPES TO CREATE NEW SHAPES

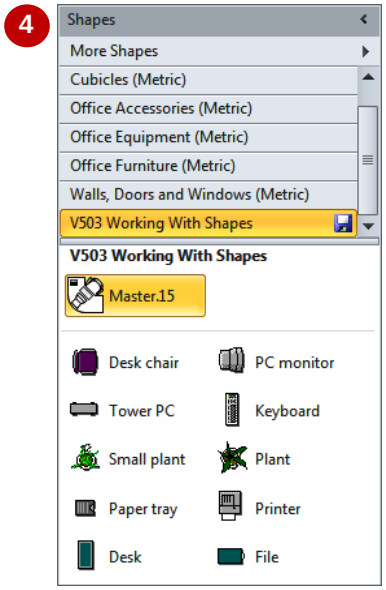
If you are creating a drawing where you are going to need multiple copies of groups of shapes, you have several ways in which you can deal with this situation. The least efficient method is to individually place each of the shapes many times over. Alternatively, you can create a new shape from the shapes and add it to either your own editable stencil or to the ***Favourites*** stencil.

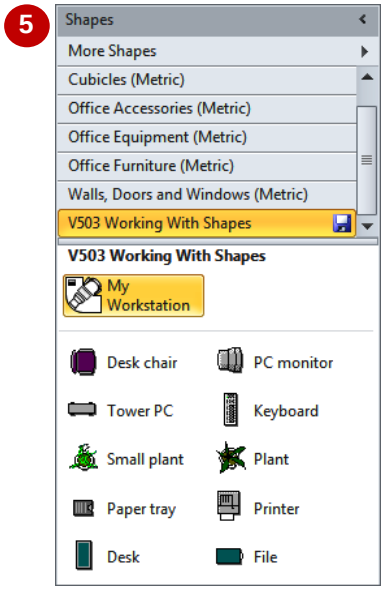
Try This Yourself:

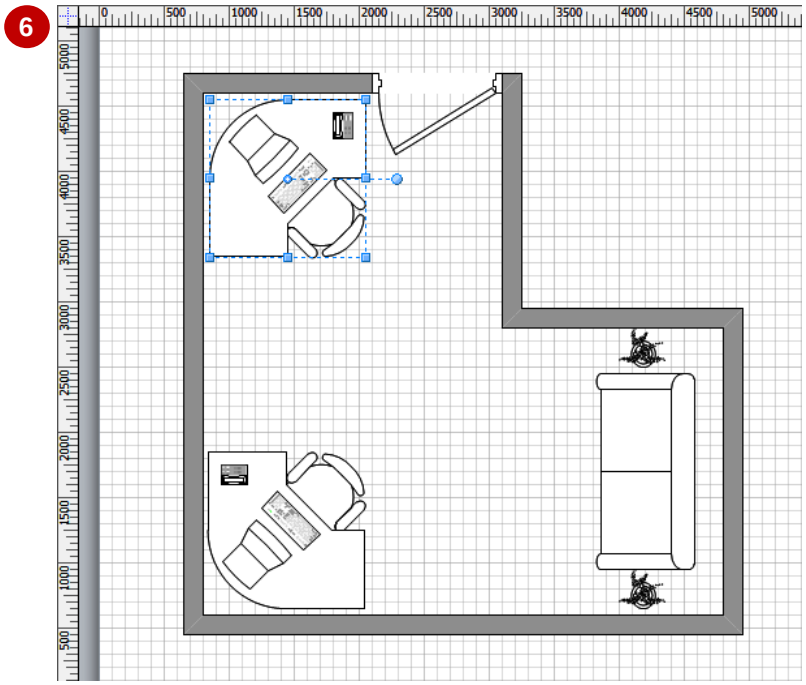
Same File *Continue using the previous file with this exercise, or open the file V503 Working With Shapes_8.vsd...*

1. Open the ***V503 Working With Shapes.vss*** stencil in the ***Shapes*** window
2. Right-click on ***V503 Working With Shapes.vss*** and select **Edit Stencil** to place it in edit mode
3. Drag a marquee to select the workstation, chair, PC monitor, keyboard and telephone
4. Press and hold down Ctrl then drag the shapes into the ***Quick Shape*** area of the open stencil to create a new ***Master*** shape

   Pressing Ctrl copies the shapes to the stencil rather than moving them…
5. Double-click on the ***Master*** text, type **My Workstation** and press Enter to rename the shape
6. Save the stencil, turn off edit mode, then drag ***My Workstation*** into the top left corner of the office and rotate it so it faces the corner







For Your Reference…

To create a new shape from existing shapes:

1. Open an editable stencil and place it in edit mode
2. Select the shapes, press Ctrl and drag them into the stencil
3. Rename the shape and save the stencil

Handy to Know…

- If you haven't made your own custom stencils, you can simply create your new shape in the ***Favourites*** stencil. Follow the procedure in the exercise except that you must open the ***Favourites*** stencil. This stencil is stored in the ***My Shapes*** folder in the ***My Documents*** folder.

GROUPING AND UNGROUPING SHAPES

You can join several shapes together to form a ***group***. A group is treated as a single shape and can be moved, formatted and resized like other shapes. Individual shapes in a group can still be selected and modified, but by grouping shapes you ensure that the placement of the objects in the group is preserved. ***Ungrouping*** a shape will change the group back into individual shapes.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file V503 Working With Shapes_9.vsd...*

1. Select the sofa and two small plants

   The three shapes will be surrounded by pink lines…

2. Click on ***Group*** in the ***Arrange*** group and select **Group**

   The pink lines will disappear leaving only the blue selection handles…

3. Use the arrow keys to move the grouped shapes a little

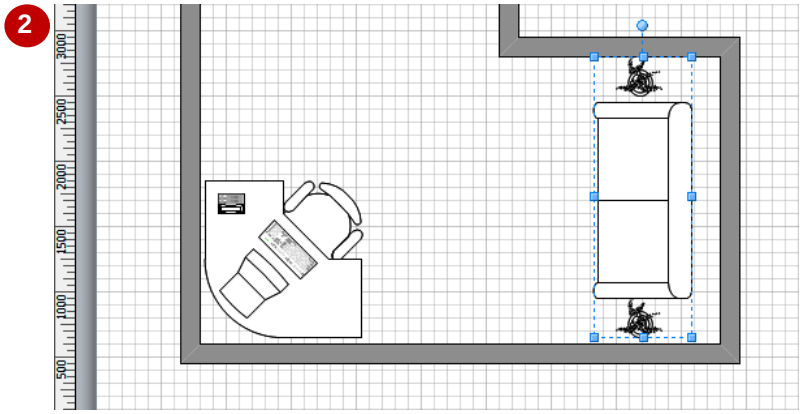
   The grouped shape is treated as one shape…

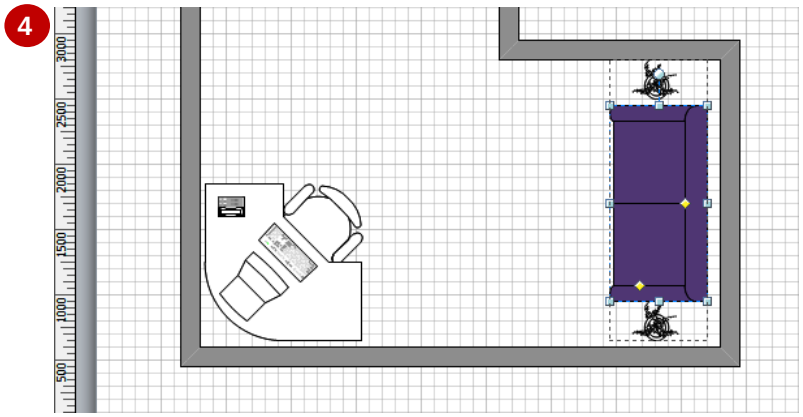
4. With the grouped shape selected, click on the sofa to select only that shape then click on ***Fill*** in the ***Shape*** group to apply a fill to the sofa

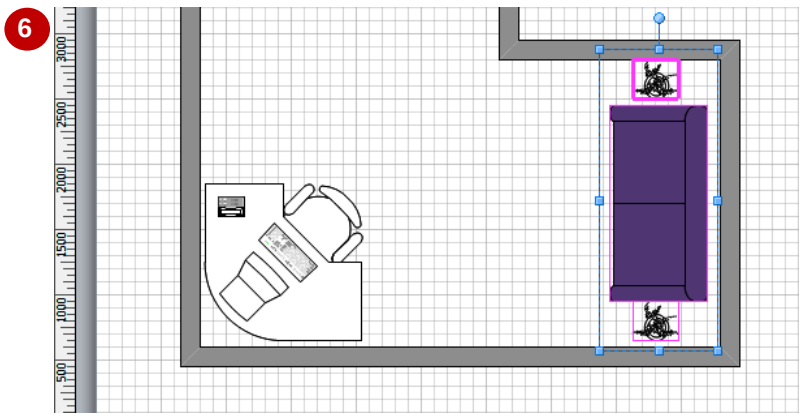
   Let's ungroup the shapes now…

5. Press Esc then click on the grouped shape again to select it

6. Click on ***Group*** in the ***Arrange*** group and select **Ungroup**







For Your Reference…

To group shapes:

1. Select the shapes to group
2. Click on ***Group*** and select **Group**

To ungroup shapes:

1. Select the group
2. Click on ***Group*** and select **Ungroup**

Handy to Know…

- You can add extra shapes to a group. After selecting the group, click on ***Group*** and select **Add to Group**. And conversely, you can remove shapes from a group. Select the group and then click on the shape to be removed, then click on ***Group*** and select **Remove from Group**.

ALIGNING SHAPES

When you place shapes on a drawing page, it is not always possible to ***align*** them accurately. Drawings look more appealing if the shapes are aligned carefully. In Visio you can align shapes horizontally and/or vertically along their edges or through their centres. When selecting the shapes to align, the first shape you select becomes the reference point to which the other shapes will align.

Try This Yourself:

Open File — *Before starting this exercise you MUST open V503 Working With Shapes_10.vsd...*

1. Click on the top right chair – it's neatly pushed under the table

   Let's align the top four chairs to the bottom of this chair – this is the reference shape…

2. Press Ctrl and click on the other three chairs to select them

   The pink lines around the reference shape are dark pink…

3. Click on ***Position*** and select **Align Bottom**

4. Move the bottom left chair up so that it appears pushed under the table like the top chairs

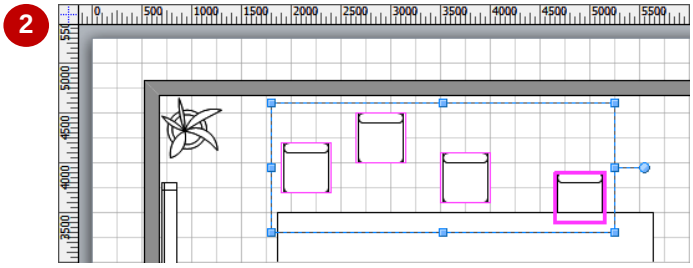
5. Press Ctrl and click on the other three chairs, then click on ***Position*** and select **Align Top**

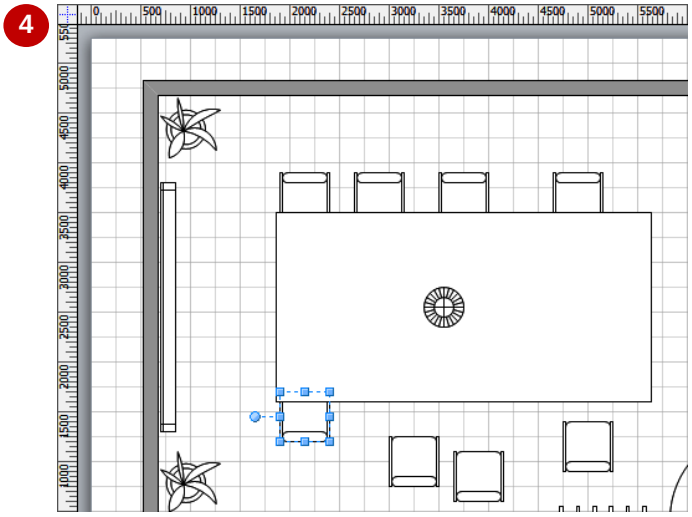
   Finally, let's centre the table lamp both horizontally and vertically with the table…

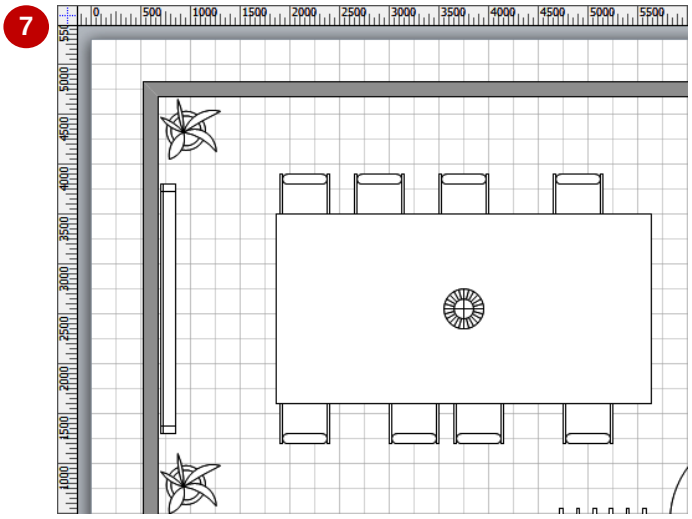
6. Click on the table, press Ctrl and then click on the lamp

7. Click on ***Position*** and select **Align Middle**, then click on ***Position*** and select **Align Centre**, then deselect the shapes to see the result

   It's looking better







For Your Reference…

To align shapes:

1. Select the reference shape, press Ctrl and then select the other shapes to be aligned
2. Click on ***Position*** in the ***Arrange*** group
3. Select the desired alignment option

Handy to Know…

- ***Live Preview*** is available for the alignment options. This lets you preview the result of each of the alignment options before applying one.

DISTRIBUTING SHAPES

To improve the appearance of your drawing, you may need to ***distribute*** the shapes. This process evenly adjusts the spacing between the selected shapes – the two end shapes aren't moved, only the shapes in between. This is a great time saver as you can quickly place all shapes on the page, move the start and end shapes into the desired location, and select and distribute the shapes.

Try This Yourself:

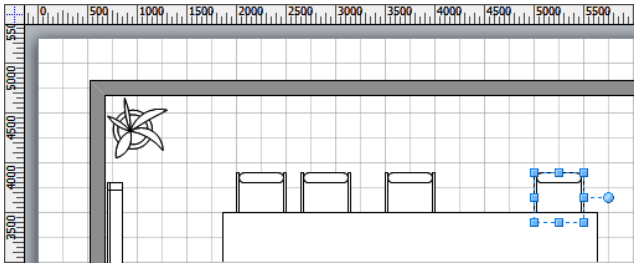
Same File *Continue using the previous file with this exercise, or open the file V503 Working With Shapes_11.vsd...*

1. Using the arrow keys, move the top left chair until its left side lines up with the ***2000mm*** grid line
2. Move the top right chair until its right side lines up with the ***5500mm*** grid line

   Now you've set up the two shapes between which you will distribute the other two chairs…
3. Select the four top chairs, then click on ***Position*** and select **Space Shapes** > **Distribute Horizontally**

   Now for the bottom chairs…
4. Click on the top left chair, press Ctrl and click on the bottom left chair, then click on ***Position*** and select **Align Right**
5. Repeat step ***4*** to right-align the bottom right chair with the top right chair
6. Repeat step ***3*** to horizontally distribute the four bottom chairs

2



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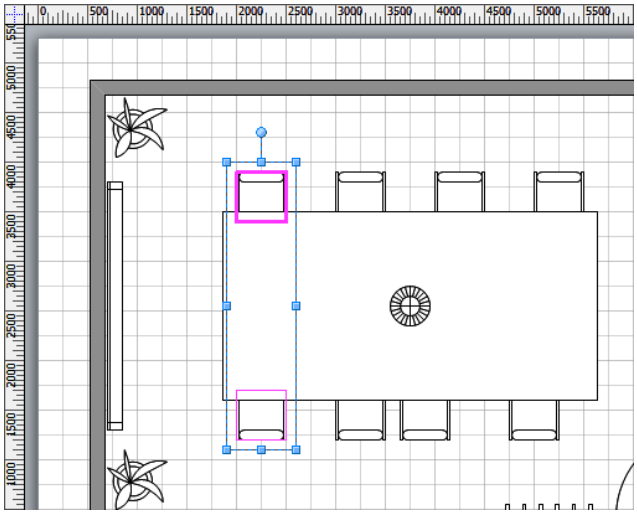

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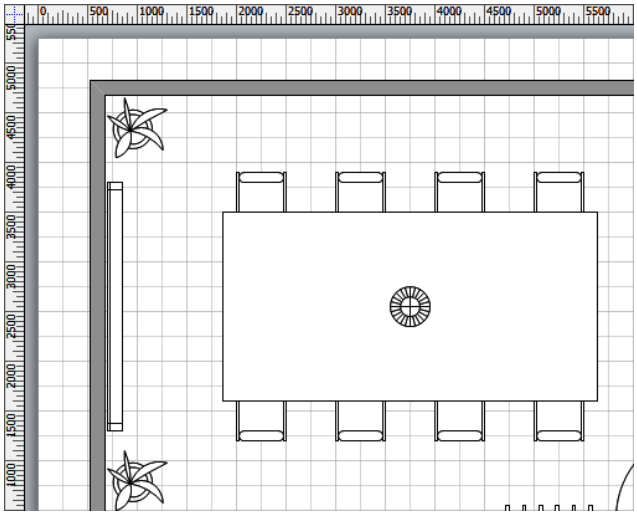


For Your Reference…

To distribute shapes:

1. Position the start and end shapes, then select them and the other shapes to be distributed
2. Click on ***Position*** and select **Space Shapes**
3. Select the desired distribution option

Handy to Know…

- Visio provides more distribution options than the two options shown on the ***Space Shapes*** submenu. Click on ***Position*** and select **Space Shapes** > **More Distribute Options** to open the ***Distribute Shapes*** dialog box.
- You must select more than two shapes to use the distribution commands.

USING SNAP AND GLUE

As you move shapes on a page, they tend to be attracted, or ***snap***, to guides, grid lines and ruler marks. This helps you to align shapes accurately and quickly. You can also choose to fasten, or ***glue***, shapes to guides or other shapes. This helps you to not only align shapes, but to move them as a group if necessary by, say, simply moving the guide to which they are glued.

Try This Yourself:

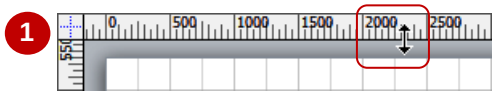
Open File — *Before starting this exercise you MUST open V503 Working With Shapes_12.vsd...*

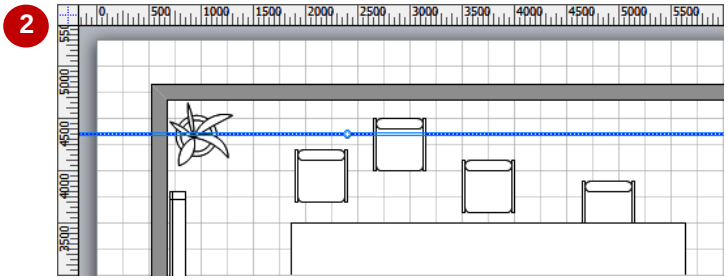
1. Hover over the horizontal ruler at the top of the page until the pointer appears as a double arrow
2. Click and drag down to about half way between the first and second chairs

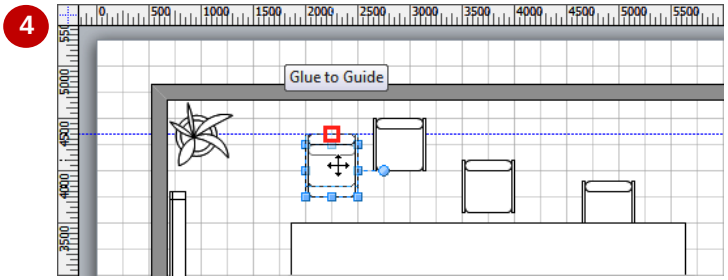
   This creates a guide to which you will align and glue the chairs…
3. Drag the left chair slightly to the right – it will 'snap' to the next grid line
4. Drag the left chair up to the blue guide

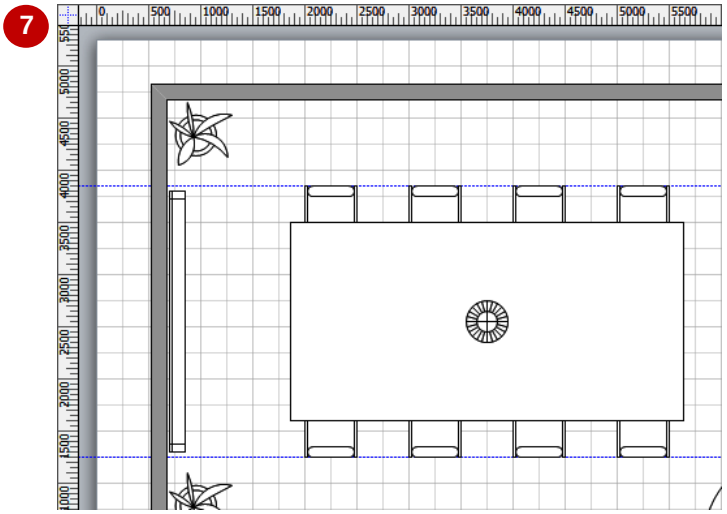
   A red square will appear when it can be glued to the guide…
5. Repeat the above steps to snap the right chair to the ***5500mm*** grid line and glue the three chairs to the guide, and then distribute the four chairs horizontally
6. Hover over the guide until the pointer appears as a double arrow, then drag it down towards the table

   The chairs will move with the guide …
7. Repeat the above steps to glue the bottom four chairs to another guide, then move it as shown









For Your Reference…

To glue shapes to a guide:

1. Hover over either ruler and drag out a guide to the desired location
2. Drag to glue the shapes to the guide

Handy to Know…

- You can specify to which item shapes will snap and glue (e.g. guides, connection points etc) and set the snap strength (where ***1*** is the weakest and ***30*** is the strongest) in the ***Snap & Glue*** dialog box. To open this dialog box, click on the ***dialog box launcher*** for ***Visual Aids*** on the ***View*** tab.

USING THE DYNAMIC GRID

The ***Dynamic Grid*** feature displays a set of guides when you move a shape near another shape, page margin or container. ***Alignment guides*** appear when the centres of shapes align and ***spacing guides*** appear when the spacing matches that of other nearby shapes. When shapes are different sizes, guides also appear when matching edges align, such as the tops.

Try This Yourself:

Open File

Before starting this exercise you MUST open V503 Working With Shapes_13.vsd...

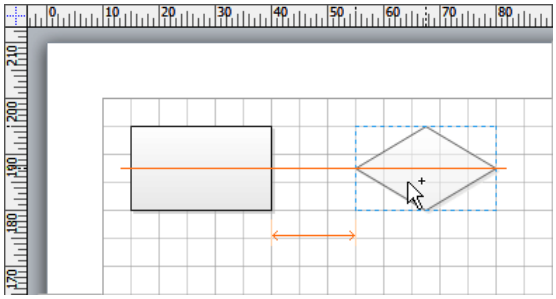
1. Click on the ***View*** tab and ensure ***Dynamic Grid*** is ticked in the ***Visual Aids*** group
2. Drag a ***Decision*** shape (Basic Flowchart Shapes stencil) to the right of the ***Process*** shape

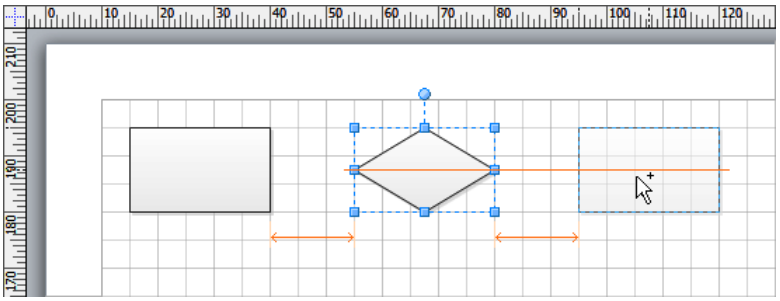
   The red alignment guide through the centre of the shapes shows that they are perfectly aligned. The spacing guide (red double-headed arrow) appears below the shapes…
3. Drag a ***Process*** shape to the right of the ***Decision*** shape until the alignment guide and two spacing guides appear as shown

   The alignment and spacing is perfect so far…
4. Drag a ***Process*** shape below the ***Decision*** shape until the alignment guide and spacing guide appears, as shown

   The centres of the Decision and Process shapes are aligned and the spacing is identical to the spacing between the other shapes in the drawing

2





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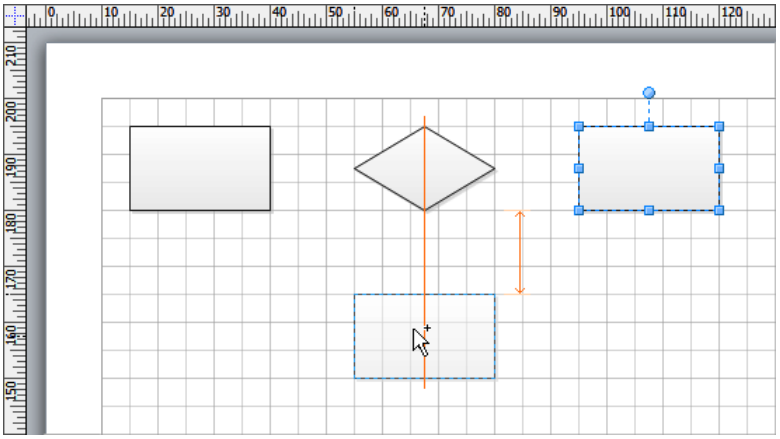

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*You can adjust the snap strength for the dynamic grid. To do this, click on the **dialog box launcher** for **Visual Aids** (**View** tab), click on the Advanced tab and adjust the **Grid** snap strength.*

For Your Reference…

To use the ***dynamic grid***:

1. Tick ***Dynamic Grid*** in the ***Visual Aids*** group on the ***View*** tab
2. Drag the first shape into position
3. Drag more shapes until the red alignment guide appears at the desired alignment and the red spacing guides appear

Handy to Know…

- ***Dynamic Grid*** is not turned on by default for all templates – it is, however, turned on for all drawings based on the flowchart templates. To turn dynamic grid on or off, click on ***Dynamic Grid*** in the ***Visual Aids*** group on the ***View*** tab.