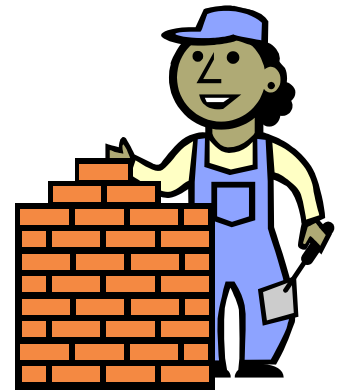# Using Adobe Photoshop

6 – Layers

One of the most useful features of applications like Photoshop is the ability to work with layers. **Layers** allow you to have several pieces of images in the same file, which can be arranged on top of each other to create a complete image. The following examples show the sort of things that can be done with layers in an image.

Change the order of overlapping image elements

→

Change the position of overlapping elements

→

**Blend image elements together in interesting ways**

→

1 - Creating Layers

In Photoshop, you can create a new layer with nothing on it which can be used for editing. You can also create a new layer by either cutting or copying a selected section from an existing layer. Additionally, a new layer may already be created when you paste a copied section from another image or when you add additional image components such as text. The exercises which follow will use examples of some of these methods.

Exercise 1 –   Creating new Layers from Selections

1) Open *Selections.psd*.
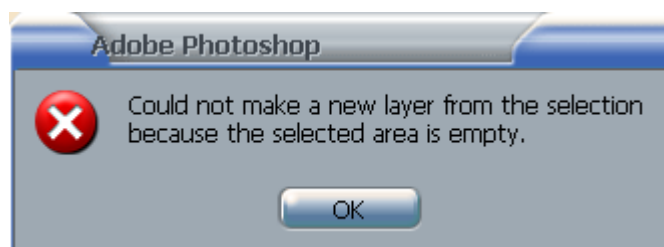2) Select the upper rectangle in the image.
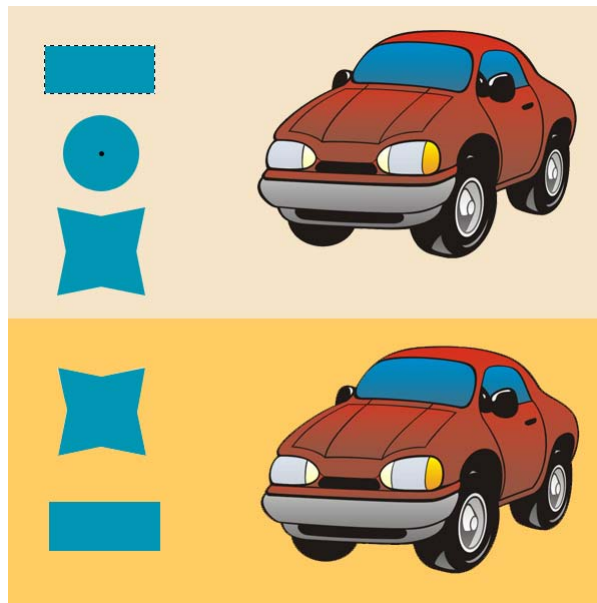
3) From the **Layers** menu select **New** and then **Layer via Copy [Ctrl] [J]**.
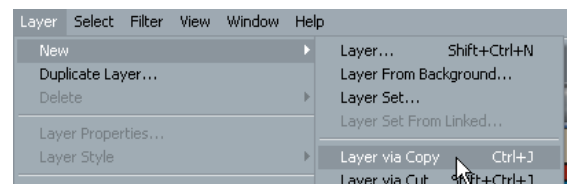
**Note**   This option can also be found by right-clicking on the selected area and then selecting **Layer via Copy**.

4) Select the circle shape.
5) From the **Layers** menu select **New** and then **Layer via Cut [Shift] [Ctrl] [J]**.

A message like the one shown here will appear. You can't select the circle because it is on a different layer.

6) Click **OK** to close the message.
7) View the **Layers Palette** (usually grouped with the **Channels Palette**).

You will see 2 layers. The top layer will be a new layer you have just created (most likely called *Layer 1*). The other one will be your *Background* layer. When you create a new image, it will usually have a background layer unless you created a new image with the transparent option. When a layer is selected it means that any edits or selections will affect that layer and not the other parts of the image. You can click on a layer to select it.
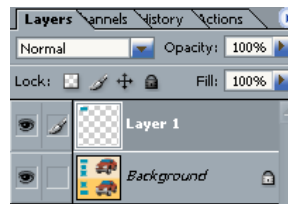

8) Click on the *Background* layer to select it.
9) Select the circle shape if it is not still selected.
10) From the **Layers** menu select **New** and then **Layer via Cut [Shift] [Ctrl] [J]**.

This time there shouldn't be a problem since you've selected the layer that the circle is on. Look in the **Layers Palette** and there will now be three layers. Next to each layer you can see a small preview of the layer's contents which helps you to know which layer is which. A good way to identify layers is by changing the properties of a layer.

11) Double click on the name of the first layer (which should contain the rectangle).

 →

12) Type *Rectangle* as a new layer name and press **[Enter]**.
13) Rename the second layer as *Circle*. You can also change the colour of a layer in the Layer Palette.
14) Right click on the *Rectangle* layer and select **Layer Properties**.
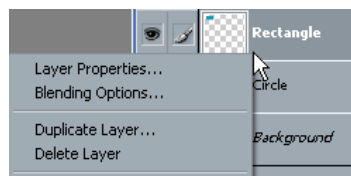
15) In the layer properties you can change the name of a layer but you can also change its layer. Select a colour for the layer and click **OK**.
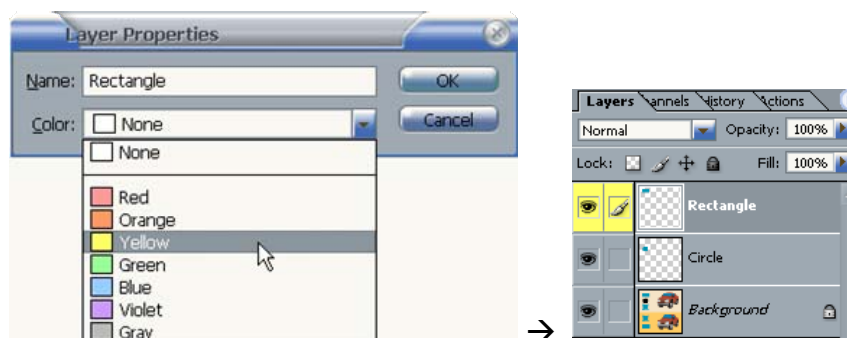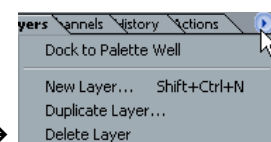

Note   When you have a particular layer selected you can also select **Layer Properties** from the **Layers** menu or from the **Layer Palette** menu.
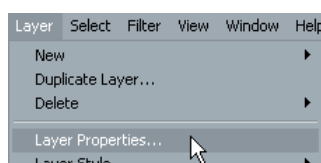
   ← Layer menu   Layer Palette menu →

Exercise 2 –   Rearranging Layers

One of the big benefits of layers is that it is easy to rearrange different parts of the image.

1) Select the *Rectangle* layer in the **Layers Palette**.
2) Temporarily select the move tool by holding down **[Ctrl]**. If that doesn't work for some reason (it may not work when certain tools are selected, you can select the move tool by pressing **[V]** or by clicking the icon in the **Tools Palette**.
3) Move the rectangle to the right. You will see another rectangle underneath since we created the new layer by <u>copying</u> the selection.

4) Select the *Circle* layer in the **Layers Palette.**
5) Move the circle to the right. Since we created the circle layer by cutting, the area left behind by the circle will be filled with whatever your background colour is.

6) Move the circle so that it overlaps the rectangle.

The circle will cover the original rectangle that is a part of the background layer but it will be covered by the new rectangle layer. The **stacking order** is determined by the order in the layers palette.

7) In the layers palette, drag the circle layer so that it is above the rectangle layer.

The circle will now cover both rectangles.

Exercise 3 –   Create more Layers

1) Select the top car in the image using one of the methods learned in the previous section (Hint-make sure you have the *background* layer selected first).

2) From the **Edit** menu select **Copy** or press **[Ctrl] [C]**.
3) From the **Edit** menu select **Paste** or press **[Ctrl] [V]** to paste the selection as a new layer.
4) Rename the new layer as *Car*.

To create a new blank layer you can go to the **Layer** menu and then select **New** and **Layer** or press **[Shift] [Ctrl] [N]**. You can also click on the new layer icon at the bottom of the Layers Palette.
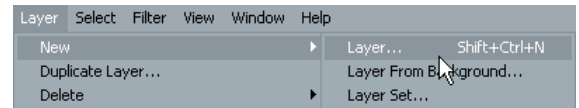
5) Use one of the methods just described to create a new layer.
6) Move the new layer below the *Car* layer and rename it *Shadow* (If you used the menu to create the layer you would have already been asked for the layer's name).
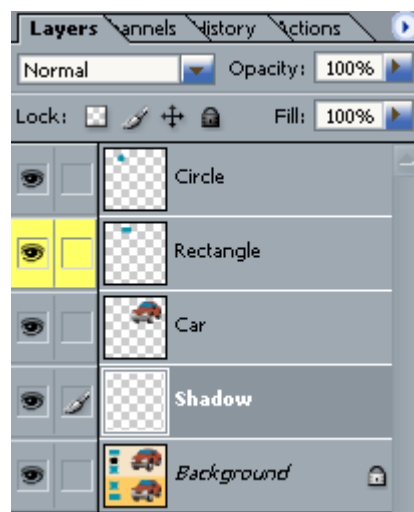
7) Select the **brush** tool by pressing **[B]** or clicking .
8) Set the brush options as follows.
   - Turn on the **airbrush** option -
   - Select a brush **diameter** of 30 pixels with a **hardness** of 0%
   - Set the **flow** to 2%
   - Change the foreground colour to black You can do this quickly by choosing default colours with the icon or by pressing **[D]**.
9) Use the airbrush to gently shade in a shadow under the car. Because you are doing it on a layer under the car, it will be behind the car and won't affect the car layer itself. Because it is on a different layer, if you don't like the result it is easy to fix it without ruining the rest of your image.

10) Save the changes to the image.

Exercise 4 – Showing and Hiding Layers

Next to each layer in the **Layers Palette** is a small eye icon . This indicates whether or not a layer is visible.
1) Click on the icon next to the *Rectangle* layer to hide the contents of that layer. The rectangle in your image will disappear.
2) Click the blank space next to the *Rectangle* layer where the eye icon used to be. This will unhide the layer and its contents will reappear.
3) Hold down **[Alt]** and click on the **hide** icon next to the *Car* layer. Every layer except the car layer will be hidden. The chequered squares indicate transparent areas of the image.
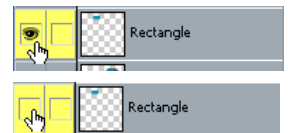
4) Hold down **[Alt]** and click on the empty **hide** icon next to the *Car* layer again to re-display all of the hidden layers.
5) Try hiding and displaying the *Shadow* layer and see the effect in the image.

2 - Blending Layers

Once you have an image with more than one layer, the layers can be blended together in a variety of ways. One way is to use modes. By default, a layer will block out any sections of layers that it covers. Blending modes allow you to combine layers in a variety of ways. Another way is to use layer transparency settings to simply make a layer partially transparent. A layer mask can also be used to hide parts of a layer a bit more selectively.

Exercise 5 –   Layer Blending Modes and Transparency

1) Select the *Circle* layer.
2) Locate the **Opacity** option on the layers palette. To use this option you can either click the arrow and drag the slider or you can enter amounts in the box. Higher amounts mean the layer will be more opaque. Lower amounts mean the layer will be more transparent.
3) Adjust the **Opacity** to see how the *Circle* layer looks on different settings.
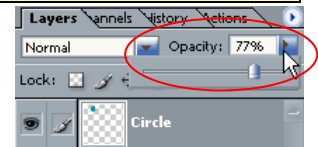
100% opacity   **70% Opacity**   **30% Opacity**

4) Select the *Rectangle* layer.
5) Move the rectangle so that it overlaps the car (remember you can hold down **[Ctrl]** to temporarily access the move tool).

The Modes options are the first thing you will find in the **layers palette**. Clicking on **Normal** will display a list of layer blending modes. These are exactly the same as the modes you used earlier with the painting tools. Selecting a mode will affect the way the layer will blend with layers that are beneath it. These layer blending modes are often used to create special visual effects in an image.
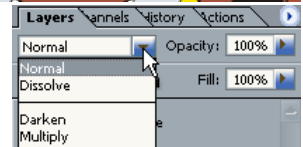
6) Try some blending modes to see how the rectangle will blend with the car beneath it.

Multiply mode   **Overlay mode**

Difference mode   **Color mode**

Exercise 6 –   Copying a layer to another image

1) Select the *Car* layer.
2) Press **[Ctrl] [A]** to select all pixels on the car layer. Areas of the layer where there are no pixels will of course not have anything selected.
3) Press **[Ctrl] [C]** to copy the selected pixels.

Note   Pasting now would create a new copy of the layer in the current image but we will paste it in to a new image instead.

4) Create a new image by selecting **File** and **New** or by pressing **[Ctrl] [N]**. The width and height of the new image will be automatically set to the dimensions of what you have copied. A handy feature!
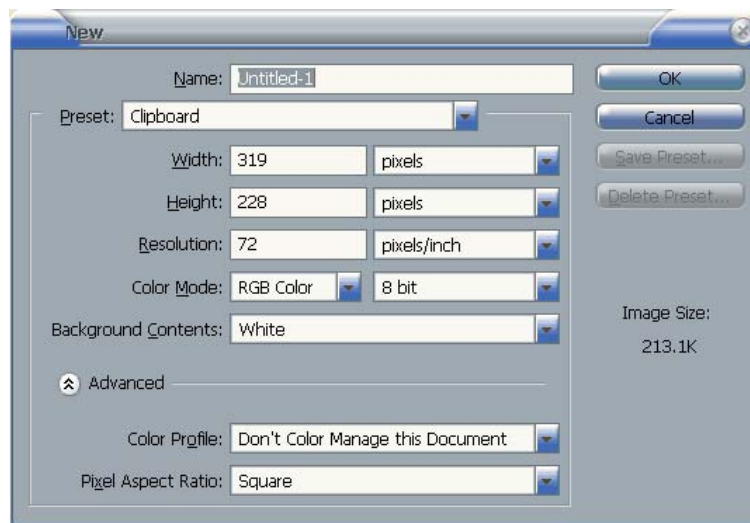
5) Click **OK** to create the blank image and then press **[Ctrl] [V]** the paste what you had copied. The new image will now have a layer with the car image (which will probably be called *Layer 1*).

There are other convenient ways to copy a layer to another image. If both images are visible, you can simply use the move tool to drag a selection from one image to another as shown below.
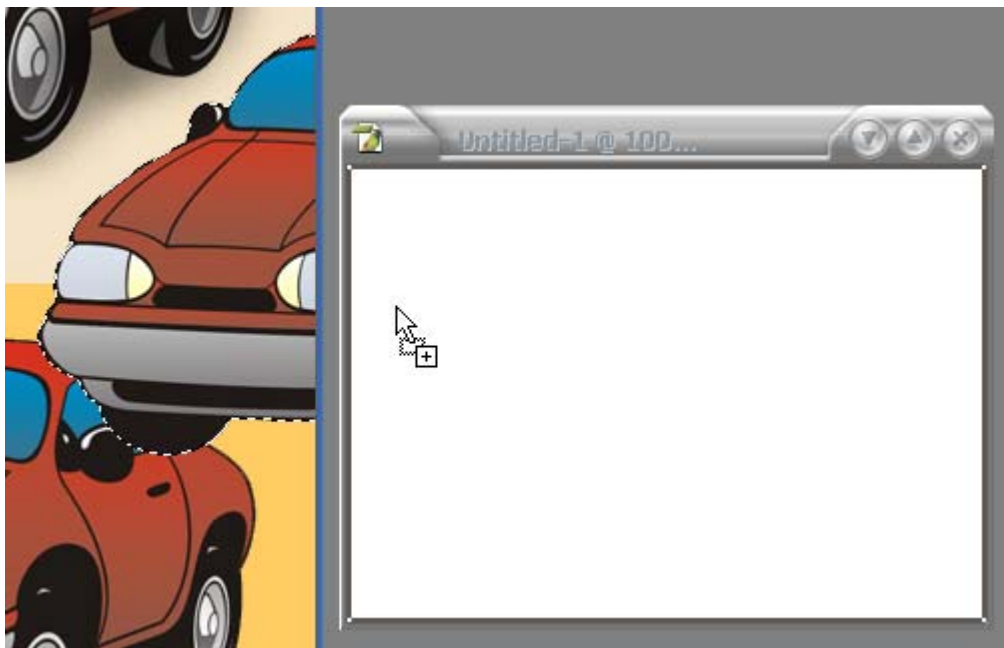
You can also drag the layer's name from the **layers palette** to the new image. The benefit of this method is that the whole layer will be copied along with the layer name.

With either of these two methods, it is useful to hold down the **[Shift]** key as you drag the selection / layer to the new image. This will mean that the copied selection or layer will be placed exactly in the centre of the new destination image.

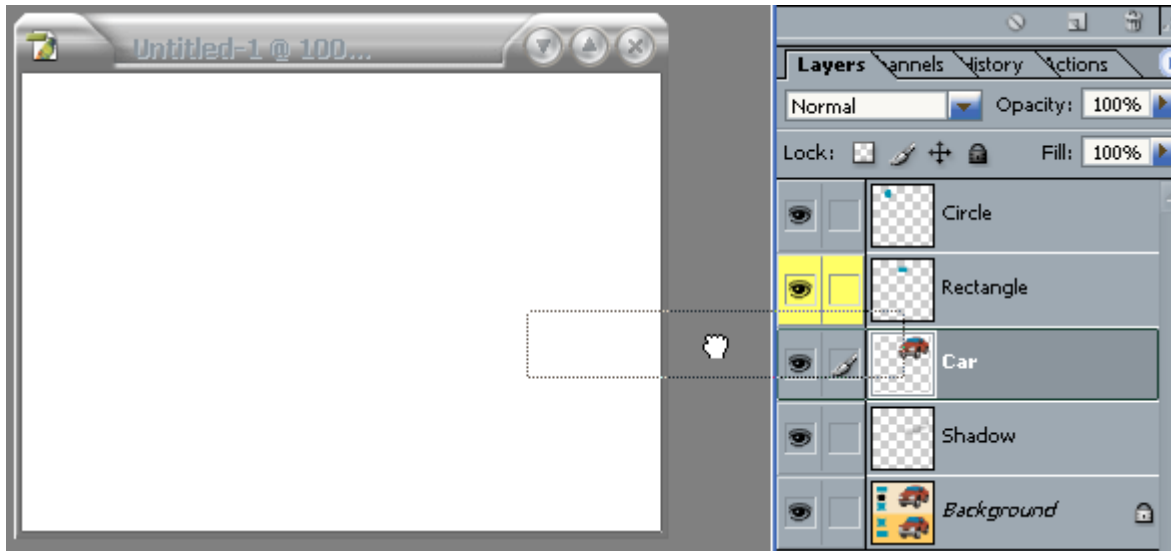6) With the new image selected, delete the new layer by dragging it to the **delete layer** icon at the bottom of the **layers palette**.

7) Switch to the *Selections* image.

8) Move your mouse over the *Car* layer in the *Selections* image.

9) Hold down **[Shift]** and drag the layer to the new image. The layer will be copied to the new image and will retain the layer name. Any additional information about the layer such as opacity, blending modes and layer effects (explained later) are also copied.
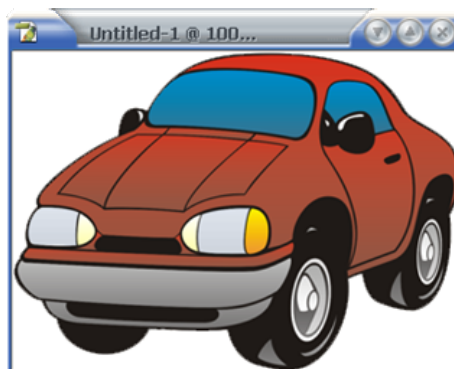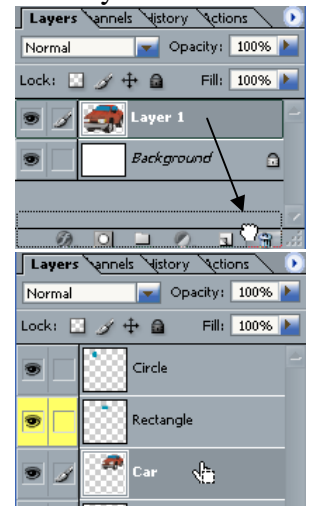
Exercise 7 –   Using a layer mask

1) Make sure you have the new image with the *car* layer selected.
2) Create a layer mask by clicking the **Add Layer Mask** icon ▣ at the bottom of the **layers palette**.

A layer mask thumbnail will appear next to the layer thumbnail in the layer palette. It will be all white indicating that the entire layer is currently visible. A layer mask is very similar to a selection mask. With a layer mask, you paint over areas with black that you want to be hidden. Painting over hidden areas with white will make them visible again. Painting over areas with any other colour will make them partially visible. The layer mask thumbnail will show the hidden areas of the image. The main benefit of a layer mask is that it allows you to hide parts of a layer without actually deleting pixels. Time to test it out.

3) Press **[D]** to set your foreground and background colours to the default colours. Normally black will be the default foreground colour with white as the background but the reverse is true with a layer mask. Press **[X]** to swap the colours so that black is the foreground colour.
4) Press **[B]** to select the brush tool. The options you have for the brush tool aren't important but it would be best to select a brush size that is big enough to see clearly so you can see the effect on the layer mask.

Before painting on a layer mask it is important to make sure you actually have the layer mask selected, otherwise you might end up painting a black streak across your layer. If the layer mask is selected, it will have a thick line around the layer mask thumbnail. Otherwise the layer thumbnail will have the line around it. If in doubt it doesn't hurt to click on the layer mask thumbnail before painting on the mask.

Layer selected

Layer mask selected

5) Make sure you have the layer mask selected and paint a line across the car. The area you paint across will become transparent.
6) Paint some more lines across the car to make more areas transparent. The transparent areas will be shown as black areas on the layer mask thumbnail.
7) Press **[X]** the swap the colours so that white becomes the foreground colour.
8) Paint across the lines you have created. Transparent areas you paint across with white will become visible again.
9) Make black the foreground colour again. Set the brush **Opacity** to *50%*. Paint over the car and the affected areas will become partially transparent.
10) Press **[D]** to set default colours again (white will be the foreground).
11) Press **[Alt] [Delete]** to fill with the foreground colour (white) and make the whole layer visible again.
12) Press **[G]** to select gradient tool.
13) Drag across the image to create a gradient that will change from transparent to opaque.
14) Close the new image without saving it.
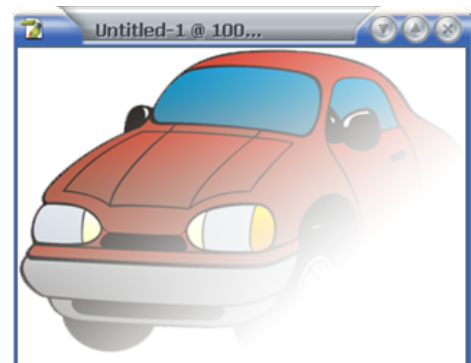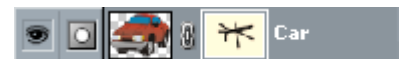
Exercise 8 –   Using Layer Effects

Photoshop has many built in effects that can be applied to a layer. These include effects such as shadows, gradients and bevels. If a layer effect is applied to a layer, the effect will update if the contents of the layer change. Several layer effects can be combined to create some very interesting looking visual effects.

1) Make sure your *Selections* image is still open.
2) Use what you have learned in this section to create a new layer based on the star shape. Call the new layer *Star*.
3) Click the **Add a layer style** icon 🖉 at the bottom of the **layers palette**.
4) Select **Bevel and Emboss** from the list of layer styles. A dialog like the one shown below will appear.
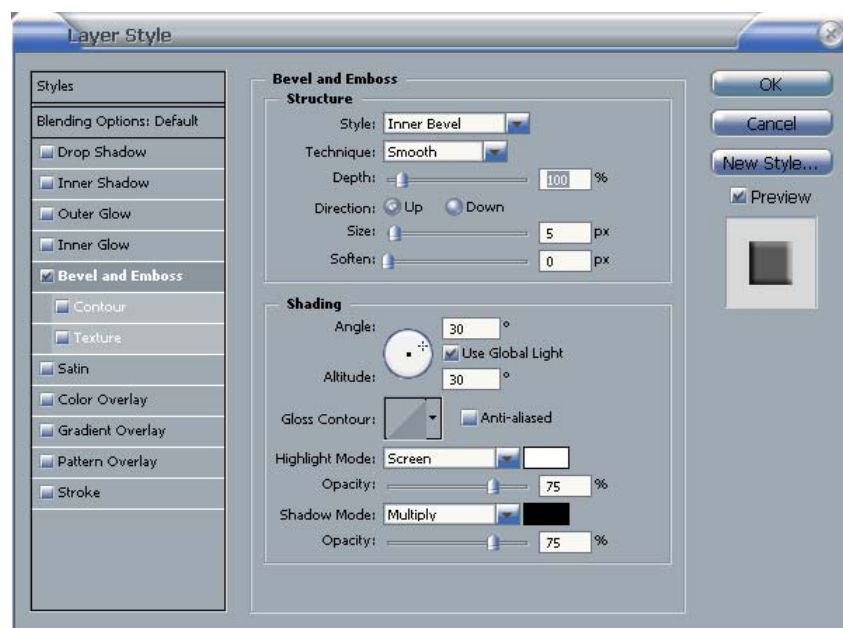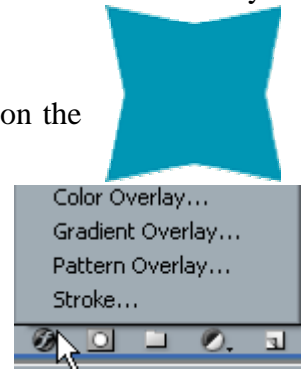
You will notice that the layer itself will automatically be changed by the layer effect options. This means that you can experiment with the layer effect options and see the effect immediately.

5) Try some of the different **Style** options and then change the style back to *Inner Bevel*.
6) Try adjusting the **Depth**, **Direction**, **Size** and **Soften** options until you like the result.

7) Drag your mouse around the **Angle** preview to adjust the light direction.
8) Adjust the options until your star looks similar to the one below.
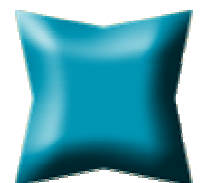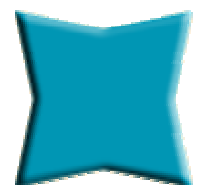
It is possible to apply more than one layer effect at the same time, simply by ticking each effect you want from the list on the left and then modifying the options for each effect to suit your needs.

9) Tick the **Drop Shadow** option to add that layer effect.
10) Click on the name of the **Drop Shadow** effect to display its options.
11) Experiment with some of the drop shadow effect options.
12) Click **OK** to apply the layer effects and save the changes to the Selections file.

Exercise 9 –   Putting it all together

See how good you are at working with layers by completing the following.

1) Open the files *Portrait.psd* (which should have your saved selection from an earlier section) and *Park.jpg*.

Portrait.psd

Park.jpg

We are going to copy the boy from the Portrait picture in to the foreground of the park picture.

2) Make sure the *Portrait* image is selected and display the **channels palette**. Your saved selection should be at the bottom of the channels list (if it's not then bad news – you'll have to select it all over again).

3) Hold down **[Ctrl]** and click on the Outline channel to quickly activate the selection.

4) Hold down **[Ctrl]** to temporarily activate the move tool since we will be moving (copying actually) the selected area to the park image.

5) With the move tool still selected drag the selection to the other image (You can hold down **[Shift]** as well if you want the selection to be placed in the middle of the other image but we're going to move it around once it's there anyway so it's not so important).

6) Once the selection is copied, you can close the *Portrait* image since it's no longer needed.

7) The boy will now be a new layer in the *Park* image. Rename the new layer as *Boy*.

8) Press **[Ctrl] [T]** to activate **Free Transform**. Move and resize the boy so that the size and positioning are similar to the example below. Press **[Enter]** when your size and positioning are about right.

9) If your original selection was a bit rough, you may have extra bits around the boy that don't belong. Now is a good time to apply a layer mask and then use an appropriate brush to neaten up the edges.

10) Save the image as *Park.psd*.

You might like to practice this by placing a picture of yourself in another image.

3 - Shortcuts Learned

Shortcut	Icon	Purpose
[Ctrl] [J]		New layer via copy
[Shift] [Ctrl] [J]		New layer via cut
[Shift] [Ctrl] [N]	⬛	New layer

Tip   In an image with a lot of layers, you can organise them by grouping related layers in to sets. The Create a new set icon ⬜ lets you create a new folder set. You can then move layers in to that set. This allows you to not only be more organised, but to apply certain changes to the grouped layers all at once.

4 - Blending Modes

The following descriptions of blending modes are taken from Photoshop's online help.

Normal

Edits or paints each pixel to make it the result color. This is the default mode. (Normal mode is called Threshold when you're working with a bitmapped or indexed-color image.)

Dissolve

Edits or paints each pixel to make it the result color. However, the result color is a random replacement of the pixels with the base color or the blend color, depending on the opacity at any pixel location.

Darken

Looks at the color information in each channel and selects the base or blend color--whichever is darker--as the result color. Pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change.

Multiply

Looks at the color information in each channel and multiplies the base color by the blend color. The result color is always a darker color. Multiplying any color with black produces black. Multiplying any color with white leaves the color unchanged. When you're painting with a color other than black or white, successive strokes with a painting tool produce progressively darker colors. The effect is similar to drawing on the image with multiple magic markers.

Color Burn

Looks at the color information in each channel and darkens the base color to reflect the blend color by increasing the contrast. Blending with white produces no change.

Linear Burn

Looks at the color information in each channel and darkens the base color to reflect the blend color by decreasing the brightness. Blending with white produces no change.

Lighten

Looks at the color information in each channel and selects the base or blend color--whichever is lighter--as the result color. Pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change.

Screen

Looks at each channel's color information and multiplies the inverse of the blend and base colors. The result color is always a lighter color. Screening with black leaves the color unchanged. Screening with white produces white. The effect is similar to projecting multiple photographic slides on top of each other.

Color Dodge

Looks at the color information in each channel and brightens the base color to reflect the blend color by decreasing the contrast. Blending with black produces no change.

Linear Dodge

Looks at the color information in each channel and brightens the base color to reflect the blend color by increasing the brightness. Blending with black produces no change.

Overlay

Multiplies or screens the colors, depending on the base color. Patterns or colors overlay the existing pixels while preserving the highlights and shadows of the base color. The base color is not replaced but is mixed with the blend color to reflect the lightness or darkness of the original color.

Soft Light

Darkens or lightens the colors, depending on the blend color. The effect is similar to shining a diffused spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened as if it were dodged. If the blend color is darker than 50% gray, the image is darkened as if it were burned in.

Painting with pure black or white produces a distinctly darker or lighter area but does not result in pure black or white.

Hard Light

Multiplies or screens the colors, depending on the blend color. The effect is similar to shining a harsh spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened, as if it were screened. This is useful for adding highlights to an image. If the blend color is darker than 50% gray, the image is darkened, as if it were multiplied. This is useful for adding shadows to an image. Painting with pure black or white results in pure black or white.

Vivid Light

Burns or dodges the colors by increasing or decreasing the contrast, depending on the blend color. If the blend color (light source) is lighter than 50% gray, the image is lightened by decreasing the contrast. If the blend color is darker than 50% gray, the image is darkened by increasing the contrast.

Linear Light

Burns or dodges the colors by decreasing or increasing the brightness, depending on the blend color. If the blend color (light source) is lighter than 50% gray, the image is lightened by increasing the brightness. If the blend color is darker than 50% gray, the image is darkened by decreasing the brightness.

Pin Light

Replaces the colors, depending on the blend color. If the blend color (light source) is lighter than 50% gray, pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change. If the blend color is darker than 50% gray, pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change. This is useful for adding special effects to an image.

Difference

Looks at the color information in each channel and subtracts either the blend color from the base color or the base color from the blend color, depending on which has the greater brightness value. Blending with white inverts the base color values; blending with black produces no change.

Exclusion

Creates an effect similar to but lower in contrast than the Difference mode. Blending with white inverts the base color values. Blending with black produces no change.

Hue

Creates a result color with the luminance and saturation of the base color and the hue of the blend color.

Saturation

Creates a result color with the luminance and hue of the base color and the saturation of the blend color. Painting with this mode in an area with no (0) saturation (gray) causes no change.

Color

Creates a result color with the luminance of the base color and the hue and saturation of the blend color. This preserves the gray levels in the image and is useful for coloring monochrome images and for tinting color images.

Luminosity

Creates a result color with the hue and saturation of the base color and the luminance of the blend color. This mode creates an inverse effect from that of the Color mode.