

CHAPTER 8
InFocus

COLOUR, FILL AND STROKE

When creating artwork, it is essential that you understand how to work with colour. For example, you need to choose the right colours to ensure you meet document and/or client requirements. What you see on your screen is rarely what you get when you print; therefore, it is important to choose the correct **colour model** for the medium on which your artwork will appear, understand the difference between **spot** and **process** colours (for printed material), and understand how to apply and edit colour using the various **colour controls** (tools) available in Illustrator.

In this session you will:

- ✓ gain an understanding of colour fills and strokes
- ✓ gain an understanding of colour models and swatches
- ✓ gain an understanding of colour controls, tools and panels
- ✓ learn how to apply colour using the **Colour** panel
- ✓ learn how to use the **Swatches** panel to apply colour
- ✓ learn how to copy appearance attributes using the **Eyedropper** tool
- ✓ learn how to swap fill and stroke colours
- ✓ learn how to adjust stroke weight
- ✓ learn how to adjust the stroke width variably
- ✓ learn how to apply dashes to strokes.

UNDERSTANDING FILL AND STROKE

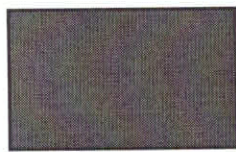
Fill is the inside of an enclosed path or object. In Illustrator, there are three types of fills: **solid colours**, **gradients** and **patterns**. This chapter will focus on applying and working with solid

colour fills. When you apply colour to the path of an object, this is called a **stroke**. You can apply a stroke and then adjust the stroke **weight** (thickness) as required.

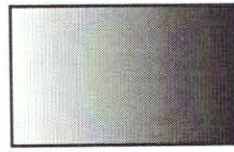
Understanding Fill

A **fill** is the **solid colour**, **gradient** or **pattern** applied to the inside of an object or enclosed path.

- **Solid colour** is a single colour fill
- **Gradient** is the graduated blend of two or more colours
- **Pattern** refers to repetitive art elements (such as tartan or a series of dots) applied to the inside of the object. Illustrator has hundreds of patterns available for you to apply and edit.



Solid fill

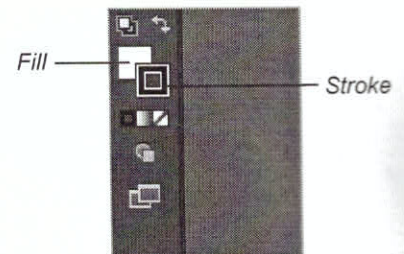


Gradient fill



Pattern fill

Fill is applied to objects using the various **colour controls** available in Illustrator (such as the **Colour** tools on the **Tools** panel, the **Colour** panel and the **Swatches** panel). You can find the **Fill** and **Stroke** icons on the **Tools** panel.



Understanding Stroke

When you apply colour to the path or outline of an object, this is known as the **stroke**. You can apply colour to paths to create strokes using the same methods you would use to apply fill. For example, you can select the **Stroke** box on the **Tools** panel and then use any of the available colour controls to apply a stroke.

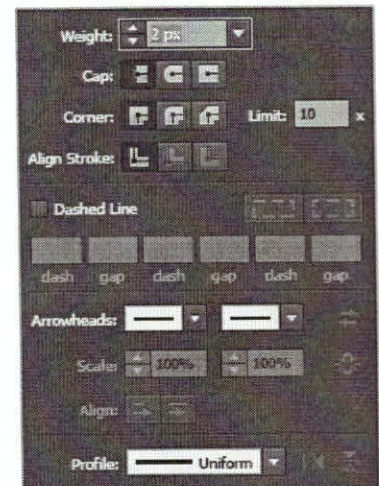
You can apply effects to the stroke, such as increasing or decreasing the **weight** (thickness), changing solid strokes to dashed lines, and so on.

Stroke Controls

When you select an object with a stroke, common tools for working with the stroke appear on the **Control** panel. Clicking on **Stroke** (hyperlink) in the **Control** panel will open the **Stroke** panel.

The **Stroke** panel (shown right) can also be accessed by clicking on **Stroke** in the panel dock, and contains many of the same tools that appear on the **Control** panel; it also contains tools to change the end or join of a stroke (such as round or square).

You can **align** strokes for objects that are closed paths. This means that the stroke can either be aligned to the centre, inside or outside of the path.



UNDERSTANDING COLOUR

Understanding colour is an important consideration when creating art in Illustrator. First, you need to know from the outset the medium on which your art will appear (such as

print-based or the web), and select the right colour model for the job. For commercial printing, you will need to understand the different types of colour to ensure that you use the right colours for the job.

Understanding Colour Models

A **colour model** (or **mode**) is a system used to create a range (**gamut**) of colours within the visible colour spectrum (all possible colours) by mixing a few primary colours. When creating digital art, the two main colour models that you will use are **CMYK** and **RGB**.

CMYK

CMYK stands for **Cyan**, **Magenta**, **Yellow** and **Black** (black is 'K' as printers often refer to the black printing plate as the *key* plate). All colours within this gamut are created by adding various percentages (values) of cyan, magenta, yellow and black. So, for example, **CMYK Red** is made up of the following values: **C = 0%**, **M = 100%**, **Y = 100%** and **K = 0%**. Each of these inks can use a value between 0% and 100%.

CMYK is the standard colour model used for print-based material, as printing presses will use a combination of these four colours to produce printed material. Combining these colours to reproduce colour for printing is called *four-colour process printing*.

RGB

RGB stands for **Red**, **Green** and **Blue**, so all colours within this gamut are created by adding varying **intensities** of red, green and blue. The intensity of each colour is represented by a value between **0** and **255**. So, for example, **RGB Yellow** is made up of the following intensities of red, green and blue: **R = 255**, **G = 255** and **B = 0**.

RGB is the colour model used to display colour on-screen, such as on TVs, computer monitors, digital cameras, etc. This is therefore the colour model you will use when creating art for the web. Colours within the RGB model are also represented by **hexadecimal colour values**. So, for example, the hexadecimal colour value for **RGB Yellow** is **#FFFF00**. Describing colours in this way provides a global standard for which to ensure the correct colours are selected. You can refer to an RGB colour chart to determine the correct hexadecimal colour values. Colour charts are freely available on the internet.

HSB

HSB stands for **Hue**, **Saturation** and **Brightness**, and is another colour model that you may prefer or need to use, and describes the following **characteristics** of colour:

- **Hue** describes the basic colour, such as orange, red or blue. Each colour in the HSB colour model is represented as a degree (°) on the HSB colour wheel, ranging from 0° to 360°. So, for example, **yellow** sits at **60°** on the colour wheel. A full understanding of the colour wheel and colour theory for this model is beyond the scope of this course.
- **Saturation** is the **intensity** of a colour, and represents the amount of grey in proportion to the hue. Saturation ranges from fully saturated (100% or full colour) to completely unsaturated (0% or grey).
- **Brightness** (also referred to as *lightness* or *value*) is the level of darkness or lightness of the hue, and is measured as a percentage value from 0% (black) to 100% (white).

Greyscale

Greyscale represents another colour model and refers to any shade of grey that sits between black and white. Greyscale is often used to convert colour artwork into high-quality black and white artwork.

Understanding Swatches

A **swatch** is a predefined (saved) fill. Fills are **solid colours**, **gradients** and **patterns**. As well as the many default swatches available in Illustrator, you can select from a range of swatch libraries (such as colour themes or industry-standard colour libraries). You can also create your own colour and save it as a swatch to the **Swatches** panel. This enables you to create a library of swatches, and is ideal when working with the same colours repeatedly in your art.

All available swatches and swatch libraries can be accessed through the **Swatches** panel.

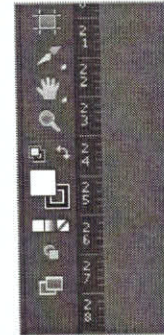
UNDERSTANDING COLOUR CONTROLS

Illustrator provides various tools and controls for applying fill and stroke colour. For example, you can apply fill and/or stroke using the **Colour** tools on the **Tools** panel or the **Control** panel. You

can also use the **Colour Picker** and **Colour** panel to select and apply colours, or use the **Swatches** panel to apply predefined colours, as well as to create your own swatches.

The Colour Tools On The Tools Panel

The **Colour** tools in the **Tools** panel can be used to apply fill and/or stroke to an object, as well as to remove fill/stroke, swap fill/stroke, apply a gradient and apply the default fill/stroke (white/black). Click on the **Fill** or **Stroke** icon once to display the **Colour** panel, or double-click to display the **Colour Picker**.

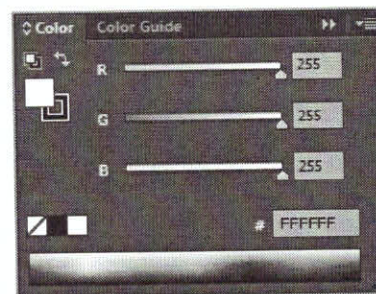


Colour tools on the Tools panel

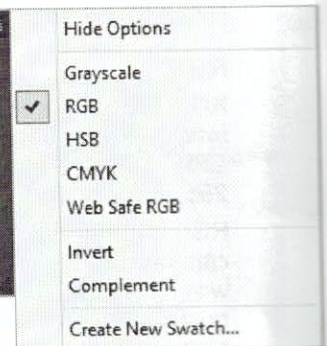
The Colour Panel

The **Colour** panel is included in most default workspaces and allows you to mix and apply colours for the selected colour model (such as CMYK or RGB). You can display it by clicking once on either the **Fill** or **Stroke** box in the **Tools** panel.

There are several methods you can use to modify colours in the **Colour** panel, including clicking on the colour spectrum, dragging the sliders, and typing in specific values.

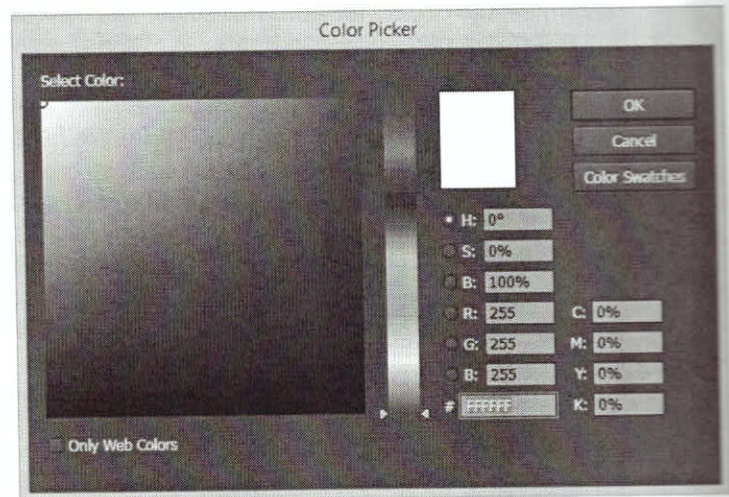


The Colour panel



The Colour Picker

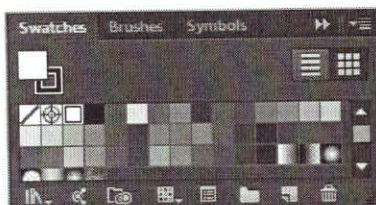
When you double-click on the **Fill** or **Stroke** box in the **Tools** panel, the **Colour Picker** is displayed. Here you have several options for selecting and applying colour. You can click in the colour spectrum, then click in the **Select Colour** box to choose a specific colour, or type values for the appropriate colour model.



The Colour Picker

The Swatches Panel

The **Swatches** panel contains a range of predefined (saved) fills for the colour model you are working with. As well as applying the default swatches, you can click on the **Swatch Libraries** menu to select an alternative swatch library or colour book (such as PANTONE industry-standard swatches). You can also create a colour and save it as a swatch for future use.



The Swatches panel

APPLYING COLOUR USING THE COLOUR PANEL

You can use the **Colour** panel to quickly and easily apply colour to your work. The **Colour** panel allows you to try a wide range of colours and find the exact colour you require, while the

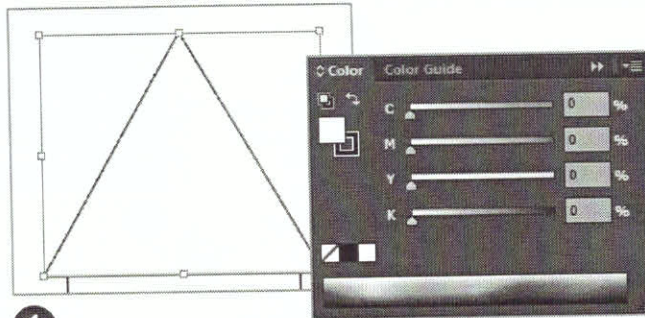
Swatches panel provides you with a selection of preset colours to work with as well as colours you have saved to use again later.

Try This Yourself:

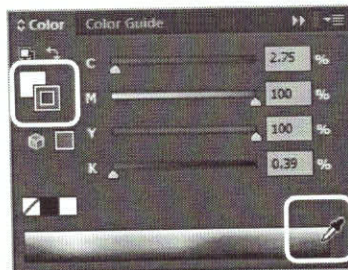
Open File

Before starting this exercise you **MUST** open the file *IL1407 Colour And Stroke_1.ai...*

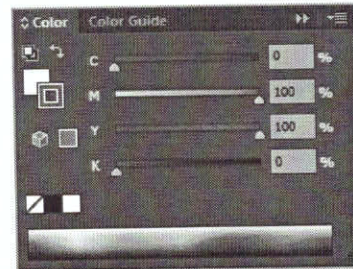
- 1 Press **V**, select the rocket's nose (the triangle), then click on **Colour** in the panel dock to display the **Colour** panel – ensure all the options are displayed
- 2 Click on the **Stroke** box in the **Colour** panel, then click on the very right of the colour spectrum (red)
- 3 Drag the **CMYK** sliders so that the values are set as shown, then click on the **Fill** box in the **Colour** panel
- 4 Click on the light blue area of the colour spectrum, then set the **CMYK** values as shown
- 5 Deselect the triangle to see the changes more clearly



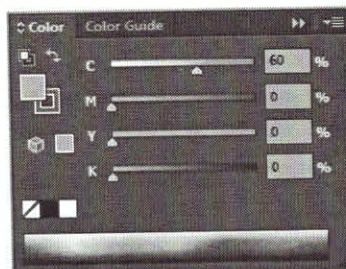
1



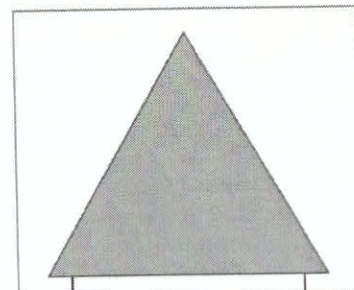
2



3



4



5

For Your Reference...

To **apply colour** using the **Colour** panel:

1. Select the object/s
2. Display the **Colour** panel, then select a colour and modify it as required

Handy to Know...

- Click on the panel options menu at the top right of the **Colour** panel to select a different model or to save the selected colour as a swatch.

APPLYING COLOUR USING THE SWATCHES PANEL

While the **Colour** panel allows you to create and modify colours, the **Swatches** panel provides you with a range of predefined colours which you can then apply directly to your artwork or modify to

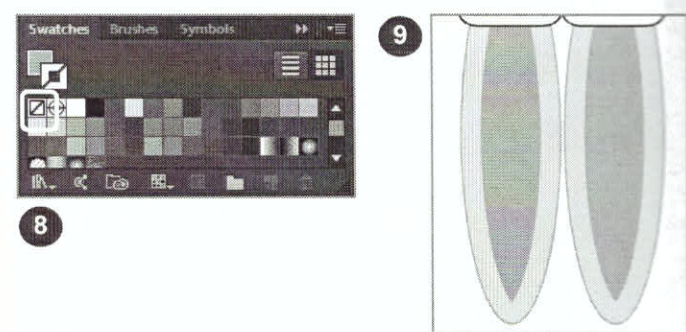
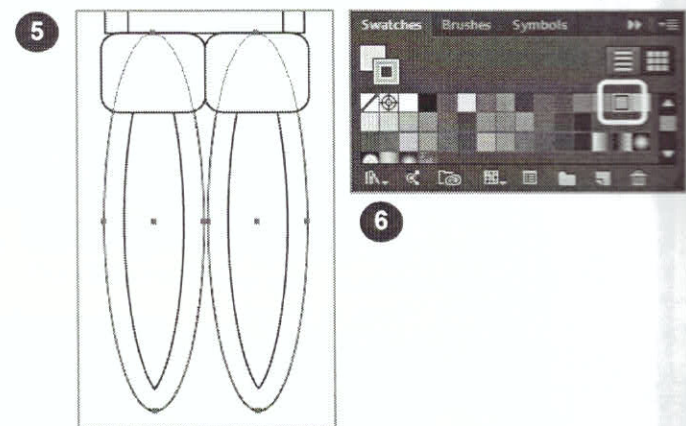
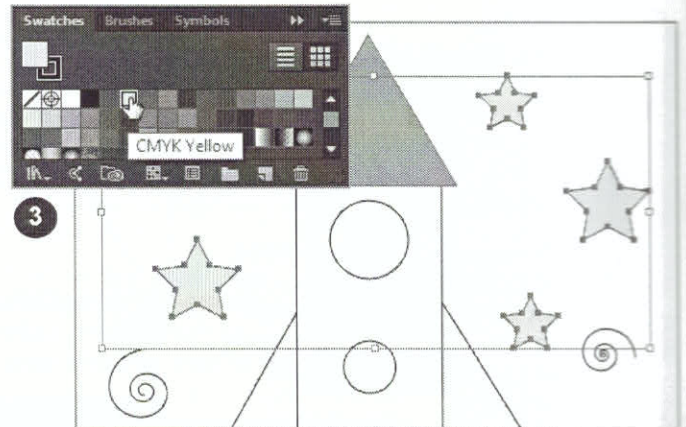
suit your needs. You may find the **Swatches** panel handy if you are not fussy about what colours are used or if you do not have the time to create specific colours.

Try This Yourself:

Same
File

Continue using the previous file with this exercise, or open the file IL1407 Colour And Stroke_2.ai...

- 1 Select all of the stars, then select **Object > Group**
As we'll be applying the same colours to all of the stars, it makes sense to group them first...
- 2 Click on **Swatches** in the panel dock to display the **Swatches** panel
- 3 Ensure the **Fill** box is active, then click on **CMYK Yellow** to apply this colour as a fill
- 4 Click on the **Stroke** box in the **Swatches** panel, then click on **CMYK Blue** to apply this colour as a stroke
- 5 Select the two outer ellipses, as shown, click on the **Fill** box in the **Swatches** panel, then click on **CMYK Yellow** to apply a yellow fill
- 6 Click on the **Stroke** box in the **Swatches** panel, then click on orange (**C=0, M=50, Y=100, K=0**) to apply an orange stroke
- 7 Select the two inner ellipses, then use the **Swatches** panel to apply orange (**C=0, M=50, Y=100, K=0**) as a fill
- 8 Click on the **Stroke** box in the **Swatches** panel, then click on **[None]** to remove the stroke
- 9 Deselect the ellipses to see the changes more clearly



For Your Reference...

To **apply colour** with the **Swatches panel**:

1. Select the relevant object/s
2. Click on **Swatches** in the panel dock
3. Click on the **Fill** or **Stroke** box in the **Swatches** panel, then click on the desired colour

Handy to Know...

- You can access a range of swatch libraries by clicking on the **Swatch Libraries menu** at the bottom of the **Swatches** panel. Available libraries include colour books for systems such as PANTONE and collections of colours for different themes such as food and art.

APPLYING COLOUR USING THE EYEDROPPER TOOL

Suppose you want to apply the same **appearance attributes** of one object to other objects. The process of selecting and applying fill and stroke colours, adjusting stroke weight and

so on could be quite tedious and time-consuming. By using the **Eyedropper** tool you can copy the appearance attributes of an existing object and apply them to other objects in just a few clicks.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *IL1407 Colour And Stroke_3.ai...*

1 Select the rocket's wings (large triangle)

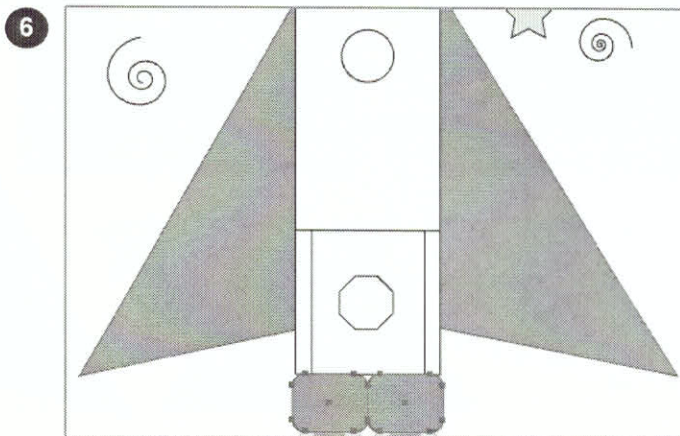
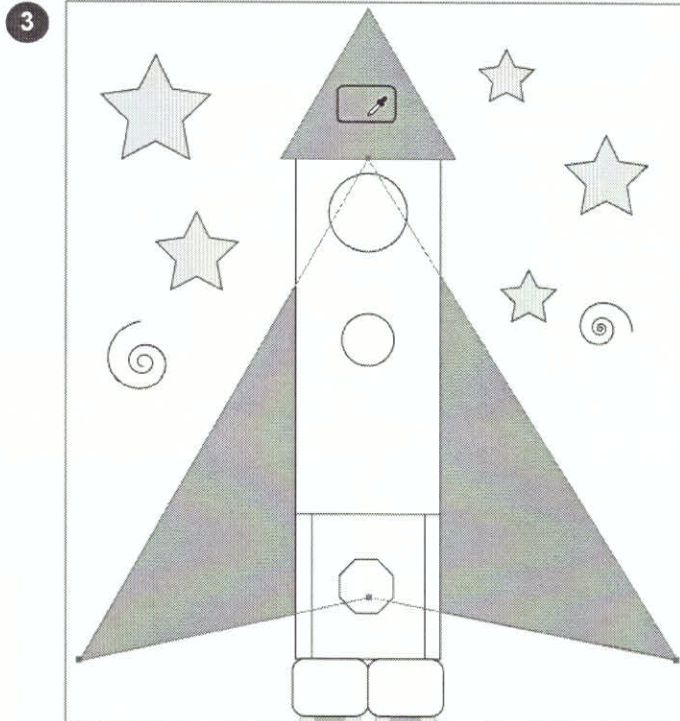
2 Press **I** to select the **Eyedropper** tool

3 Click on the rocket's nose
The same fill and stroke colours that are applied to the nose are now applied to the wings...

4 Press **V**, then select both of the rounded rectangles (the rocket's jets)

5 Press **I**, then click on the rocket's nose

The fill and stroke appearance attributes (colours) of the rocket's nose will also be applied to the jets



For Your Reference...

To **copy attributes** using the **Eyedropper tool**:

1. Select the target object
2. Click on the **Eyedropper** tool, or press **I**
3. Click on the object that has the required attributes

Handy to Know...

- **Appearance attributes** refer to elements of an object, such as fill and stroke colour, formatting and effects that you can see. Objects also have underlying attributes, such as path behaviours, that are not affected when using the **Eyedropper** tool.

SWAPPING FILL AND STROKE COLOURS

To swap fill and stroke is to reverse the fill and stroke colours of an object. In this exercise you will use both the **Eyedropper** and the **Swap Fill and Stroke** tool to apply fill and stroke colour to

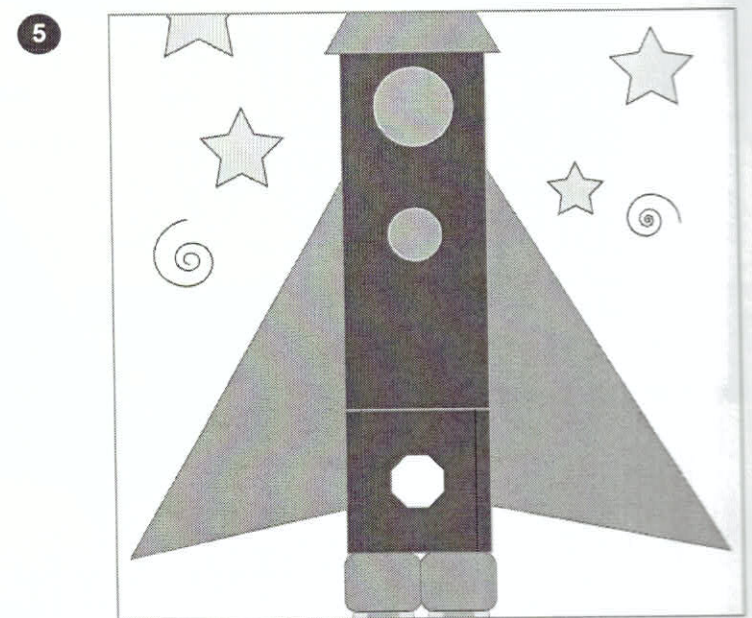
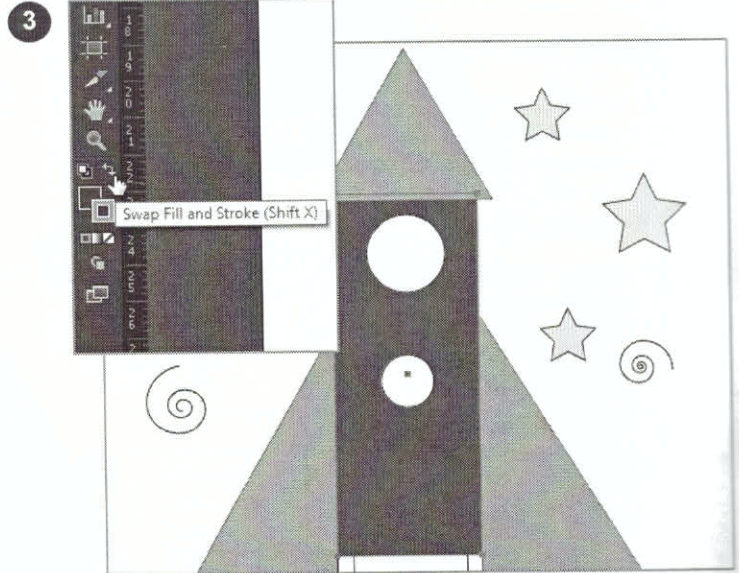
several objects, and then reverse the fill and stroke colours. This feature is handy when you want to maintain a similar colour scheme across your art.

Try This Yourself:

Same
File

Continue using the previous file with this exercise, or open the file *IL1407 Colour And Stroke_4.ai...*

- 1 Press **V**, then select the main body of the rocket (the larger rectangle)
- 2 Press **I** to select the **Eyedropper** tool, then click on the rocket's wing
- 3 In the **Tools** panel, click on **Swap Fill and Stroke**, or press **Shift + X**
The fill and stroke will be reversed...
- 4 Repeat steps 1 to 3 for the smaller rectangle
- 5 Repeat steps 1 to 3 to apply the fill and stroke of the larger ellipses (flames) to both circles (rocket windows), then reverse the fill and stroke of the circles



For Your Reference...

To **swap fill and stroke colours**:

1. Click on the target object
2. Click on **Swap Fill and Stroke** in the **Tools** panel

Handy to Know...

- To return to the default **fill** (white) and **stroke** (black) at any time, select the object, then click on **Default Fill and Stroke** in the **Tools** panel.
- To remove the fill or stroke of an object, click on the **Fill** box or **Stroke** box, then click on **None** in the **Tools** panel.

WORKING WITH STROKE WEIGHT

You can increase or decrease the **weight**, or thickness, or the stroke. You can adjust the stroke weight using the **Control** panel option, or you can use the options available in the **Stroke**

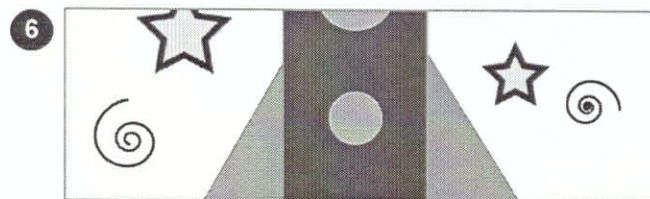
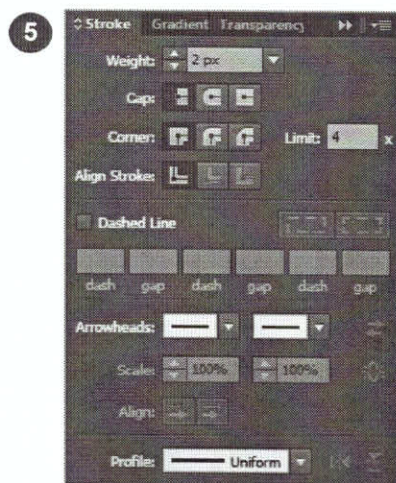
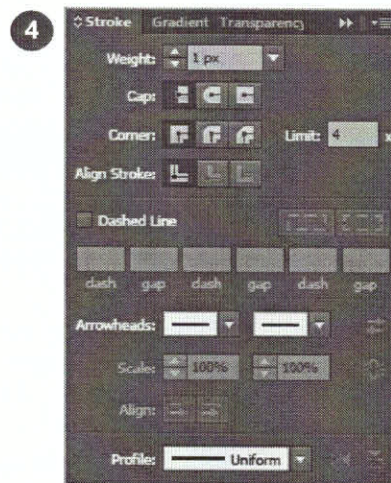
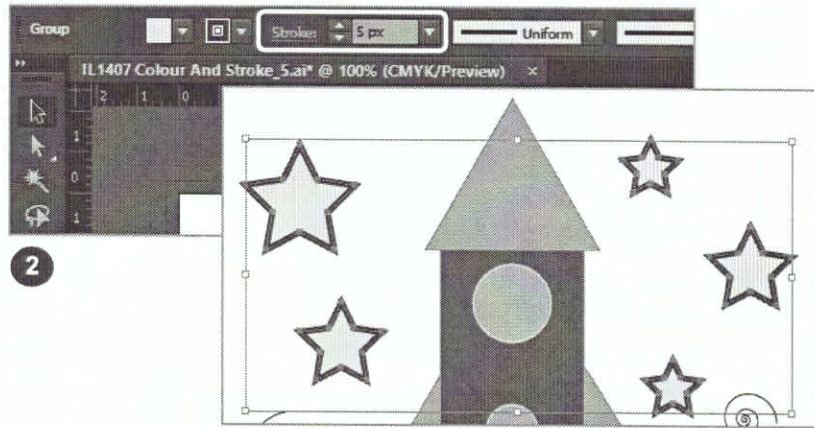
panel. The default stroke weight is **1 px**. In this exercise you will increase the stroke weight of the stars to make the purple stroke more visible.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *IL1407 Colour And Stroke_5.ai...*

- 1 Ensure the **Selection** tool is active, then click on a star to select the group
- 2 In the **Control** panel, click on the up arrow for **Stroke** four times to set the stroke to **5 px**
The stroke of each star is now 5 px thick...
- 3 Click on the canvas to deselect the group, then select both of the spirals
- 4 Click on **Stroke** in the panel dock to display the **Stroke** panel, then click on panel options and select **Show Options** to expand the panel and see all of the options
- 5 Click on the up arrow for **Weight** to apply a weight of **2 px**
- 6 Click on the canvas to deselect the spiral group and see the effect



For Your Reference...

To **adjust** the **stroke weight**:

1. Click on the object to select it
2. Click on the up or down arrow for **Stroke** in the **Control** panel, or
Click on **Stroke** in the panel dock, then click on the up or down arrows for **Weight**

Handy to Know...

- When adding a stroke to objects, the stroke is centred along the path of the object. So, when increasing stroke weight, it will increase equally on both sides of the path. You can use the **Align Stroke** options in the **Stroke** panel to align the stroke to the inside or outside of the path instead.

WORKING WITH STROKE WIDTH

The **Width** tool allows you to apply variable widths to a stroke. You adjust the width of the stroke by clicking and dragging on an anchor point or any part of the path. It is known as

variable width as the width of the entire stroke is not adjusted, only the selected path segment or the path segments on either side of the selected anchor point.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *IL1407 Colour And Stroke_6.ai...*

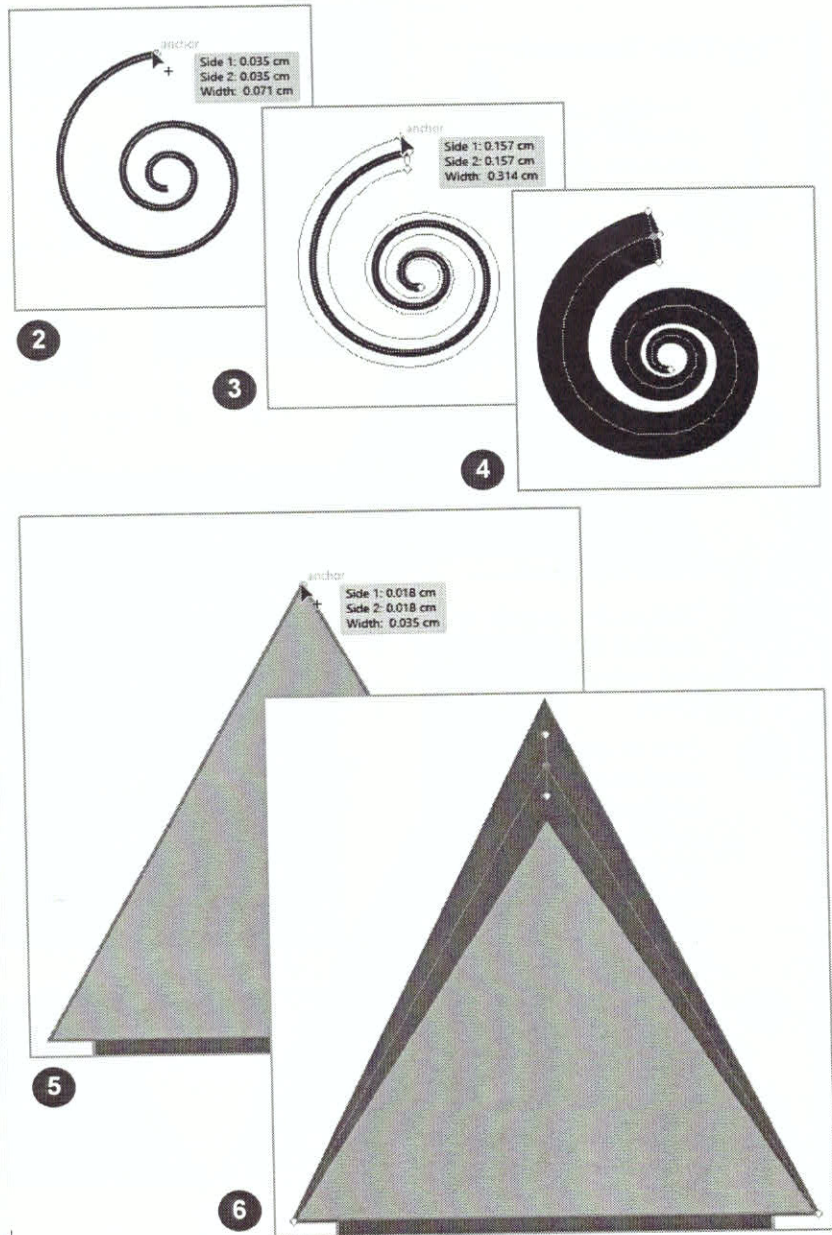
- 1 Press **Shift** + **W** to select the **Width** tool

First we are going to increase the variable width of a spiral...

- 2 Zoom in to **300%**, then point to the top anchor point of the left spiral, as shown, until the label **anchor** is displayed
- 3 Click and drag up slightly, as shown
- 4 When the label displays about **0.25** for **Side 1** and **Side 2**, release the mouse button

Let's now increase the width of two sides of the rocket's nose...

- 5 With the **Width** tool still selected, point to the top of the rocket's nose, as shown
- 6 Click and drag up until the label displays about **0.275** for **Side 1** and **Side 2**, then release the mouse button



For Your Reference...

To **create strokes** of **variable widths**:

1. Click on the **Width** tool or press **Shift** + **W**
2. Click and drag an anchor point or path of an object

Handy to Know...

- When you adjust the width of a stroke by dragging an anchor point, two **width points** are created either side of the anchor point (point to the anchor point to see these). Click and drag on a width point to adjust the stroke width, or double-click on a width point to open the **Edit Width Point** dialog box.

APPLYING DASHES TO STROKES

Illustrator provides many different effects that you can apply to strokes. One common effect is changing solid strokes to **dashed** lines. You can specify the **point** size (length) of the dash, as

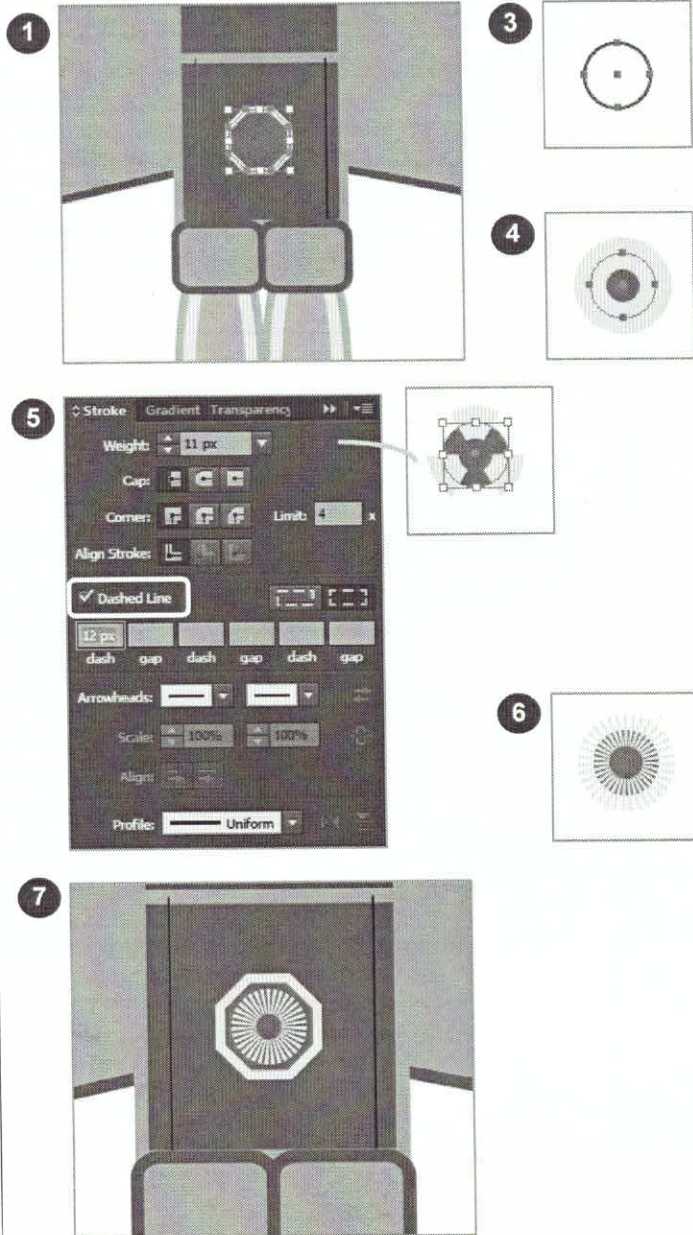
well as the **gap** (space) between each dash. In this exercise you will create and apply a dashed stroke to a circle, and then complete the octagon logo.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *IL1407 Colour And Stroke_7.ai...*

- 1 Select the octagon, apply **CMYK Yellow** to the stroke and **CMYK Green** to the fill, then increase the stroke width to **4 px**
- 2 Select the small rectangle, then select **Object > Lock > Selection**
This will enable you to add art to this area without moving the rectangle...
- 3 Deselect all objects, click on **Default Fill and Stroke**, then draw a circle on the artboard with a **W:** and **H:** of **0.8 cm**
- 4 Apply **CMYK Yellow** to the circle's **Stroke** and **CMYK Green** to the **Fill**, then apply a **Stroke Weight** of **11 px**
- 5 With the circle selected, click on **Stroke** in the panel dock, then click on **Dashed Line** until it appears ticked
- 6 Type **1 (px)** in the first **dash** field, press **Tab** to apply the change, then deselect the object to view the result
- 7 Press **V**, select and position the circle in the centre of the octagon until the label **intersect** appears, then click elsewhere to see the result



For Your Reference...

To **apply dashed lines** to **strokes**:

1. Select the object, then click on **Stroke** in the panel dock
2. Click on **Dashed Line** so it appears ticked
3. Type in the **dash** and **gap** values as required, then press **Tab** or **Enter** to apply

Handy to Know...

- By default, the **gap** between each dash is **2 px**. You can increase or decrease the gap between each dash and vary the point size of the dashes and gaps to create varied effects.
- Use the various **Cap** options in the **Stroke** panel when creating dashed lines (and gaps) to create varied effects.

NOTES:

A graphic design element consisting of a circle on the left, connected by a vertical line to a horizontal line that spans the width of the page. Below this horizontal line are 15 horizontal lines for writing notes.