Using Flash

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Overview

About Flash

Adobe Flash is an application that is used to create various types of animation. It is commonly used on the Internet due to the small file sizes possible with Flash and many of its features are specially tailored for use in websites. Flash was originally an animation application called FutureSplash Animator until it was bought by Macromedia in the mid 90s and renamed Flash. In recent years the company Macromedia was acquired by Adobe Systems and is now sold as Adobe Flash. These tutorials have been prepared using Adobe Flash CS3 Professional which is the 9th version of Flash. You can check which version you are using by going to the Help menu and then choosing the About option at the bottom of the menu. Most of what we will do in these exercises will be the same in older or newer versions of Flash.

Key Concepts

Before we learn about Flash it is important to understand some concepts that are important in all forms of animation. Flash uses some terminology that is common, not only in computer animation but in traditional forms of animation also.

Frames

When you watch a film the movie is made up of frames being displayed quickly one after another. The amount of frames that appear each second can vary. For example Australian analogue television is based on the PAL standard, which shows 25 frames per second.

In Flash you can modify the number of frames which appears each second, though 12 frames per second is the default setting.

Key Frames and Tweening

In traditional animation, such as old Disney cartoons, each frame was drawn by hand. The main animator didn't necessarily draw each and every frame though. Generally the lead artist or animator would draw frames which showed the main sequence, such as a frame for each second. Then those frames would be passed on to an assistant animator who would draw the frames in between. The frames drawn by the lead animator are the **key frames** while the processing of connecting them with intermediate frames in **tweening**.

The same concept applies in computer animation. Rather than have to draw every single frame of animation, you will typically only crate key frames at important points in your animation. Then you can use tweening to get the computer to fill in the frames in between. The following example shows how tweening creates frames that lead to a smooth transition between key frames.
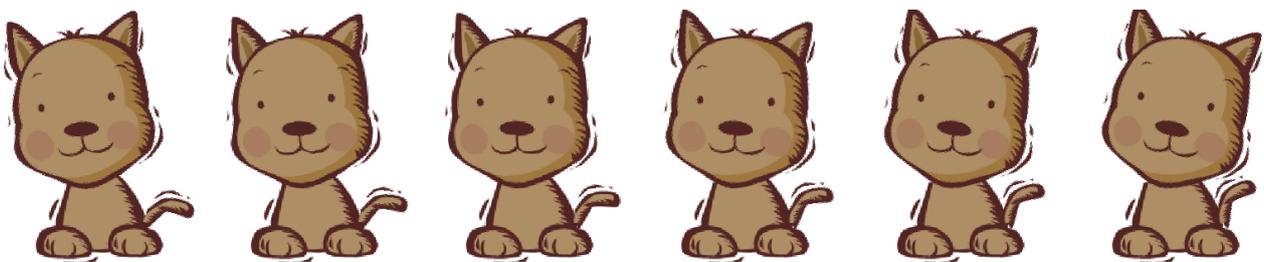
Meet Flash

Like most applications, Flash can be opened in a variety of ways, such as selecting the link from the Windows Start Menu.
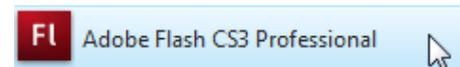
When Flash is open, it will look similar to the following example.
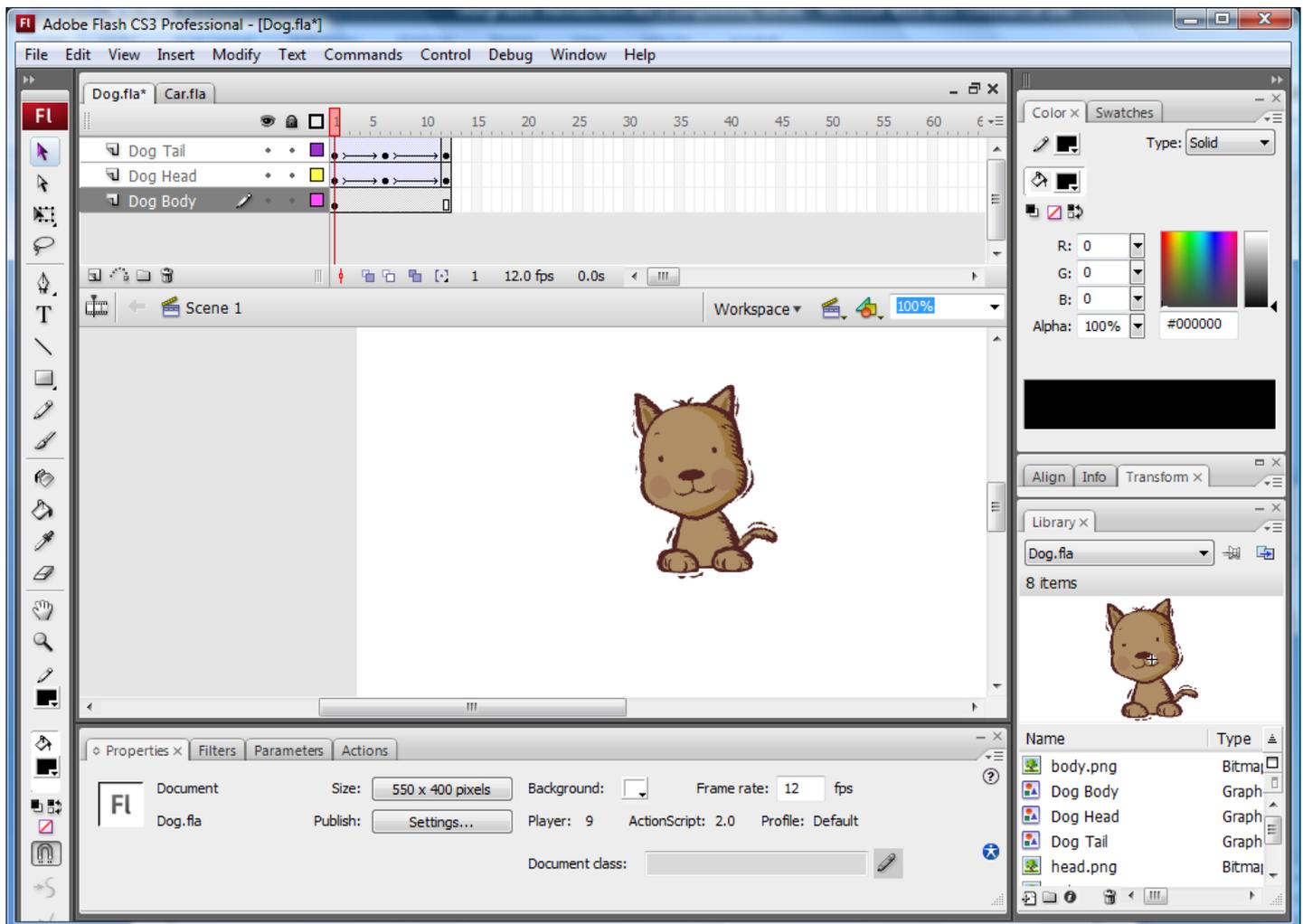
Menu Bar

Along the top of the window is the **Menu Bar**. This works like the menu in most Windows applications and we will use it frequently to access important functions in Flash.
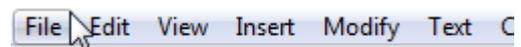
Tools Panel

The **Tools Panel** sits along the left side of the window and provides access to tools used for drawing and similar functions. In older versions of flash, icons on the Tools Panel were arranged in two columns. In recent versions of a flash, you can click a small arrow button above the tools panel to switch between having the icons arranged in one or two columns.

Control Panel

Along the bottom of the window is the **Control Panel**. The options in this panel will change depending on what tool or object you have currently selected.
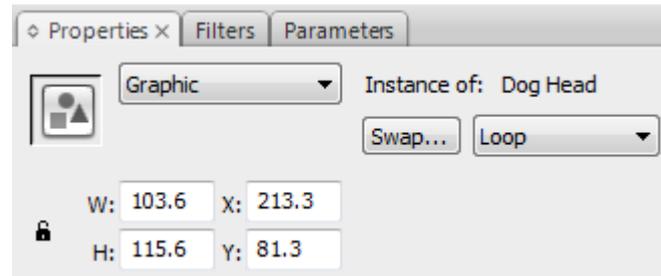
Panels

The right side of the Window is occupied by various Panels which allow access to a variety of features and settings. Panels in this area can be closed or moved so their appearance may vary on different computers. If at any time you would like to return the position of the Flash Panels to their original position, you can go to the **Window** menu and select **Workspace** and then **Default**.
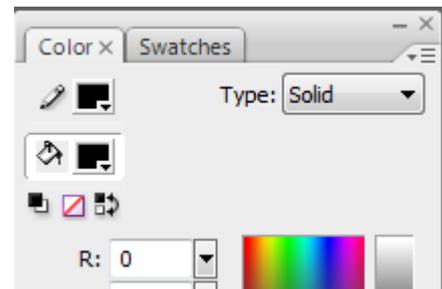
Timeline

Beneath the menu bar will be the **Timeline** area. The left section of this area will contain the layers that are being used in your animation. The right section of this area contains the timeline which allows you to control the frames in your animation. Tabs along the top of this area allow you to switch between any animation files if you have more than one currently open.
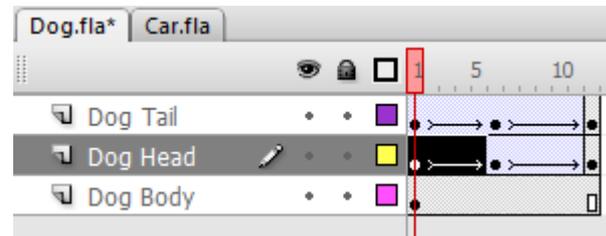
The Stage

The main editing area of Flash is referred to as **The Stage**. This is where all the action takes place, just like the action in a play takes place on the stage.

Exercise 1.   Starting a Flash Project

When you first open Flash, you will usually see a **Welcome Screen** like the one below taking up the timeline and stage area. If you don't see it, then it is most likely because the **Don't show again** option was selected a previous time that Flash was opened. The welcome screen can be turned back on in Flash's options if this has been the case.

The left part of the welcome screen lists the most recently opened files. If this is the first time you have used Flash this part will be empty. You can quickly open a file by clicking its name in this list. You can also open recent files from the **File** menu.

The central part of the welcome screen provides options for creating a new Flash file.

The right section provides options for creating a file using one of the built in templates. There are templates for a wide variety of uses such as creating flash animations for banners on websites or for use on mobile phones.

1. Select one of the **Flash File ActionScript** options from the central section of the welcome screen. If the welcome screen is not showing, Select **New** from the **File** menu and then select one of the **Flash File ActionScript** options from the **General** tab. You will now have a new flash file with an empty stage before you.

Note   Action script is a language which allows you to add more advanced elements and interactivity to your animations. Flash CS3 allows you to create Flash projects that use either version 2 or 3 of the language. For most of the early projects we will be working on it won't matter whether you select version 2 or 3, but generally we will select version 2 since that is compatible with older versions of Flash.

Exercise 2. Using the Shape Tools

Flash has several shape tools that you can use to help you create pictures for your animations.

1. Locate the Shape tool to the left of the screen on the Tools Panel. Depending on which shape was last used the picture on the icon may look like an ellipse or a rectangle shape.
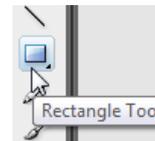
You will notice a small triangle shape in the bottom corner of the icon. This lets you know that there is more than one tool grouped together. Click on the icon and hold your mouse button down to see the rest of the icons in the group.

2. Click on the Rectangle tool icon to select it.

Tip – you will notice that the icon has a letter **R** next to it. That lets you know that in future you can select the rectangle tool by pressing **R** on your keyboard. Paying attention to the tips given on the icons, or the tool tips as you move your mouse over an icon, is a good way of learning shortcuts.
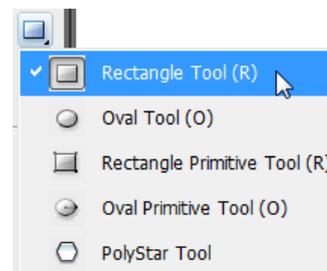
Now you will have the rectangle tool activated and when you move your mouse over the stage, your mouse pointer will change in to a cross shape. +

3. With the rectangle tool still active, drag your mouse on the stage to create a rectangle shape. A rectangle using the selected colours will be created. Unless you have changed the colours before drawing the shape, the rectangle will have a black outline and a white interior.
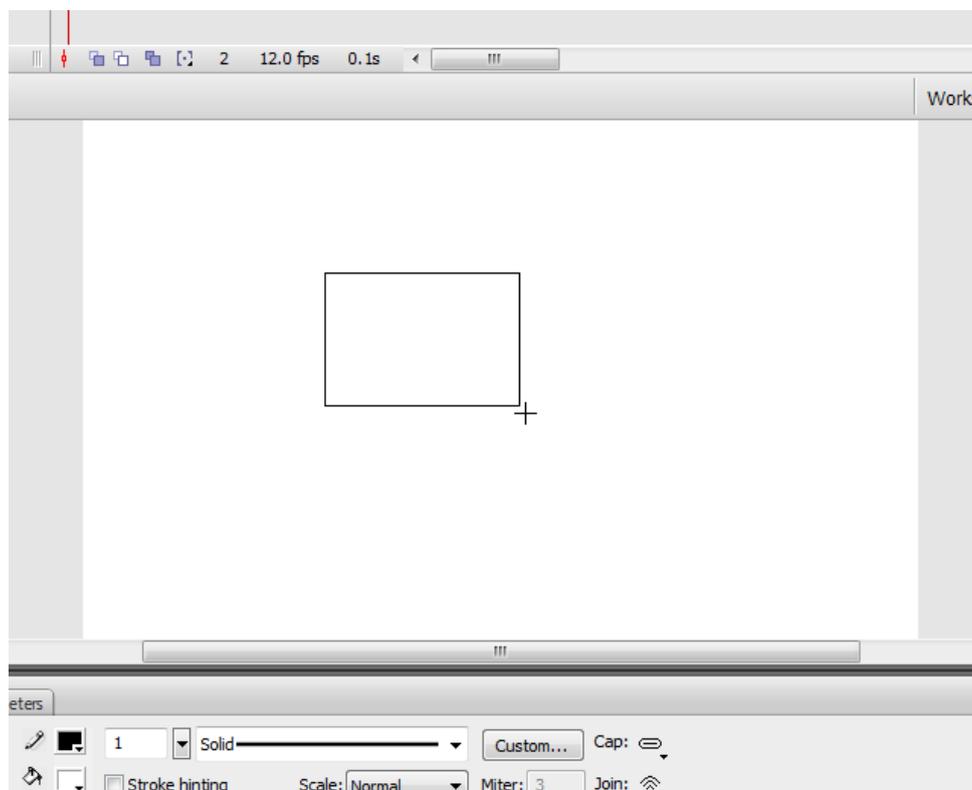
Exercise 3.   Selecting shape colours

You can modify the colours of a shape either before you draw the shape, or after you have drawn it. In this exercise we will select colours and some other options before drawing a new shape.

1. Make sure your **Rectangle Tool** is still selected.

At the bottom of your Tools Panel there are 2 colour icons. One is for changing the **Stroke** colour. In most graphics program, the outline of a shape is referred to as the stroke. The other is for changing the **Fill** colour which is the colour inside the shape.

2. Click the **Stroke color** icon (it looks like a pencil with a coloured square under it). A range of colours will appear. Later on we will look at advanced options for selecting colours but for now, click on any dark colour. This colour will be used for any shapes you draw from now until you select a different stroke colour.

3. Click the **Fill color** icon (it looks like a paint can with a coloured square under it). A range of colours will appear. Click on any light colour. This colour will be used for any shapes you draw from now until you select a different fill colour.

4. Now draw a new rectangle next to your first one and it will use the fill and stroke colours you have just selected.
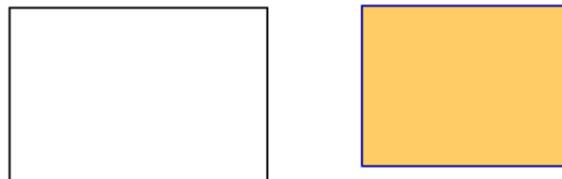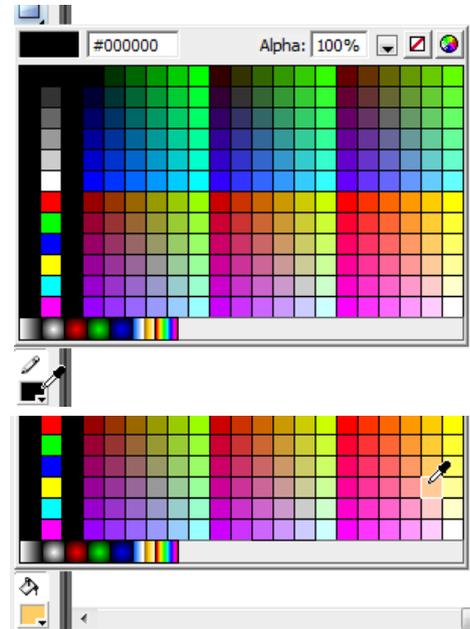
Tip   If you want an even greater range of colours, click the 🌐 icon in the top right corner of the colour selector to open the colour mixer.

Exercise 4.   Drawing other shapes

1. Change the fill colour and stroke colour the same way you did in the last exercise to colours of your own choosing.

2. Click and hold your mouse button on the rectangle tool to see the other shape tools.

3. Select the **Oval Tool** (you can also press the letter **O** on your keyboard to select the tool).

4. Draw an oval near your rectangles.
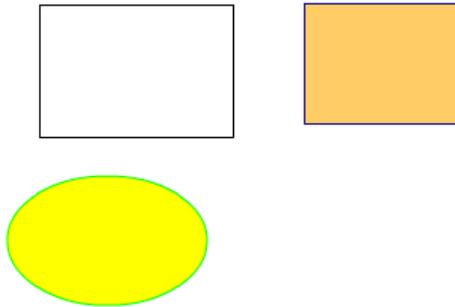
5. Hold your mouse on the shape tool and select the **PolyStar tool**.

6. Choose a different **Fill** and **Stroke** colour for the new shape.

Before you draw an object with this shape you can change the options to select how many sides the shape have. You can also choose to make the shape a star and modify how 'pointy' the star's points will be.

7. Make sure the **Properties panel** Is visible along the bottom of your window. You can select it from the **Window** menu or press **Ctrl F3** on your keyboard if it isn't.

The options in the properties window will change depending on what tool you are using. If you still have the PolyStar tool selected, the Properties panel will show PolyStar Tool to the left of the options.

8. Click the Options... button to open the **PolyStar** options.

9. Change the type of shape from Polygon to Star.

10. Change the number of sides and star point size to an amount different from what was already selected and click **OK**.
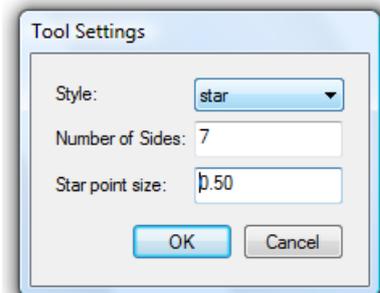
Note: When you draw a rectangle or oval you begin drawing from the corner. When you draw a polygon or star though, you draw from the centre of the shape outward. Keep this in mind when you choose where to draw it.

11. Now that you have chosen your settings, draw the star shape near your other shapes.
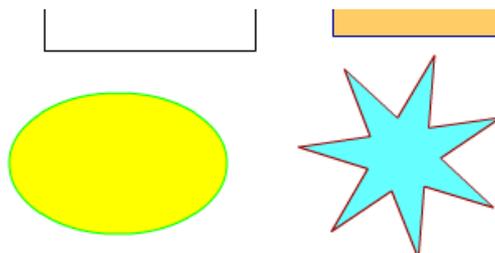
Exercise 5. Selecting Shapes

If you want to modify shapes you have already placed on your stage, such as changing colours or moving them, you first need to know how to select shapes. Selecting objects in Flash has many thins in common with other applications you may have learned, though there are a couple of techniques unique to Flash.

Firstly, it is important to note that in Flash, a shape is made up of the Fill and the Stroke. These are often treated as separate components even though they may look like they are all part of the same object. This allows you to select parts of a shape separately but it also means that you need to know how to select the whole shape when necessary.

1. Choose the selection tool from the top of your Tool Panel by clicking the icon or pressing **V** on your keyboard. Move your mouse over the middle of one of your rectangles.

2. Move your mouse over the middle of the first rectangle you drew. While your mouse pointer is over the middle of a shape your mouse pointer will change from the normal selection arrow to a

   different shape.

3. Click the rectangle to select it. The inside of the rectangle will become shaded to show that it is selected.
4. Drag the rectangle away from the other shapes.

You will notice that the fill of the rectangle (the interior) will move but the stroke (the line around the rectangle) stays behind. This is because when you click in the middle of the shape you have only selected the Fill and not the Stroke.

5. Go to your **Edit** menu and select **Undo** or press **Ctrl Z** on your keyboard to undo the move.

6. Click on a blank area of your stage or press the **Esc** key to make sure no shape is selected.

7. Move your mouse over the stroke (outline) of the first rectangle you drew. Your mouse pointer will change in to a different shape. The exact shape will depend on whether your mouse is over one of the sides or one

   of the corners as the following examples show.

8. Click to select one of the sides of the rectangle. That line will be shaded to show it is selected.

Note: When you are selecting colours for either a Fill or a Stroke, in the top corner of the colours you can see a No colour icon ▧. If you select this icon then the shape you draw will have no fill or no stroke, depending on which one you were changing at the time. If a shape has no stroke then you won't be able to click on its edge. If a shape has no fill then you won't be able to click in the middle to select it.

9. Move your mouse over the fill (middle) of the rectangle and double-click. This will select the whole shape including both the Fill and Stroke.

10. Try selecting one of your other shapes in the same way.
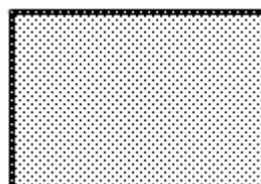
Exercise 6.   Additional methods for selecting shapes

One additional way that you can select a shape is by dragging your mouse around the shape you want to select.

1. Make sure you have the select tool active and move your mouse to an area above and to the right of the second rectangle you drew.
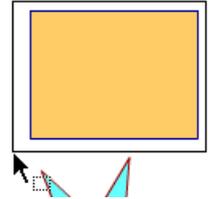
2. Hold down your mouse button and drag a rectangle shape that completely surrounds the shape.

If you don't drag your mouse around the entire shape then only the parts you drag your mouse around will be selected.

3. Drag your mouse around the oval shape, but this time, don't select the entire shape. Now try dragging the selected area away from the rest of the shape. The selected area will become separated from the rest of the shape. This can be very handy as an easy way of splitting a shape in to separate pieces but be careful, people sometimes do this accidentally when they were trying to select the whole shape.
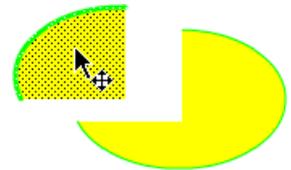
You can also select more than one shape in a variety of ways.

4. Drag a rectangle area with your selection tool that covers both of your rectangles so that they both become completely selected.
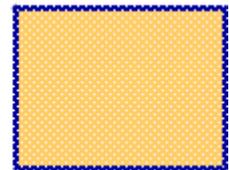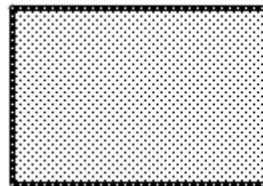
You can also use your shift key to select and de-select objects.

5. Hold down shift and click on an object (such as your star) to add it to what is currently selected. Remember that when you do this you will only select the part you click such as the fill or a part of the stroke. You will need to hold down shift and click on the other parts of the shape if you want them to be selected also. In the example shown to the right, the fill of the star is selected but only some parts of the stroke along the right edge are selected.
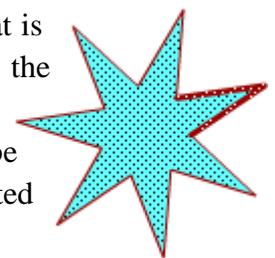
6. Hold down shift and click on an object that is already selected to de-select it.

7. Press **Ctrl A** to select everything on your stage.

8. Press **Esc** to ensure nothing is selected.

9. Save your file with the filename *Basic Shapes* (**Crtl S** or choose the S**ave** option from the **File** menu).

10. Close the file (**Crtl W** or choose the **Close** option from the **File** menu).

Exercise 7. Cookie Cutter shapes

Many people are familiar with using a cutter to cut out shapes from pastry. A similar concept can be used to create shapes in Flash. This is because when a shape in flash is moved to overlap another shape, it will remove the parts of the other shape that it covers. The exercise below will illustrate how this can be used.

1. Create a new blank Flash File from the welcome screen or from the file menu.
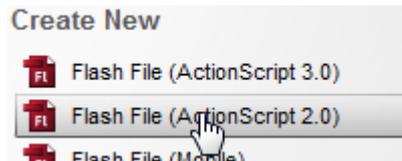
2. Select the **Oval tool**.

3. Set the **Fill colour** to yellow and set the **Stroke color** to the same colour.

4. Draw a circle on your stage. When you are drawing the shape, when the width and height are similar, you can see a small circle next to your mouse. This lets you know that Flash is helping you to keep the height and width the same so that your oval will be a perfect circle. You can also hold down the **Shift** key when you are drawing any shape to ensure that the height and width stay the same.

5. Draw a smaller circle next to the first one.
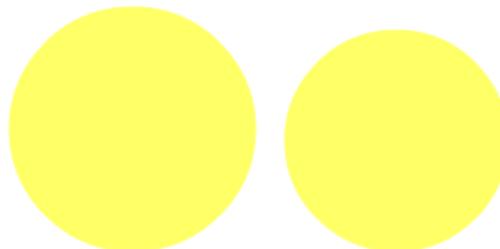
6. Now using the Select tool , select the smaller circle. Make sure you select the whole circle and not just the fill (hint – double click with the selection tool to select all of the circle).

7. Drag the smaller circle so that it overlaps the larger circle.

Tip: In addition to dragging objects with your mouse, you can also move them a little bit at a time by pressing the arrow keys on your keyboard. This is good for small adjustments.
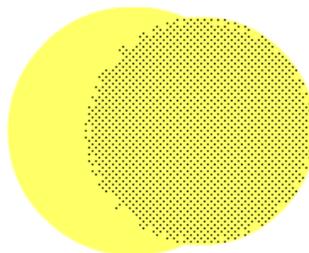
8. Press **Esc** so that nothing is selected.

9. Double click the smaller circle again to select it.

10. Drag it away from the larger circle. The parts of the larger circle that were covered have now been removed, leaving us with a neat, crescent moon shape. You can use this technique to create a wide variety of shapes with the 'cookie cutter' method.
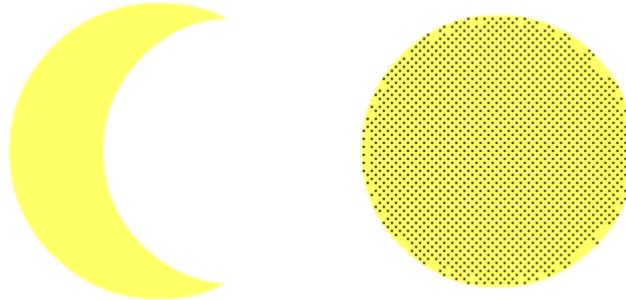
Note: In later exercises we will begin to use Layers so that we can make shapes overlap without them affecting each other in the way we have just seen.

11. Save the file as *Moon* and close the file.

Exercise 8. Changing shape settings

1. Open your *Basic Shapes* file.

2. Select your star shape using any of the methods learned previously. (make sure you have the whole shape selected including stroke and fill).

The properties panel at the bottom will show the properties for the selected shape.
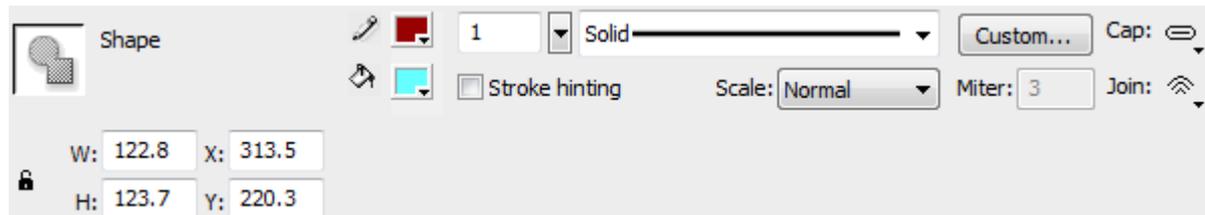
The options to the left can be used to change the Width and Height of the shape (later we will look at using the transform tool to resize objects).

3. Use the **Stroke colour** option to change the line colour.

4. Use the **Fill colour** option to choose a different colour for the fill.

5. Use the **Line thickness** option to change the line thickness to **5**.

6. Use the **Line style** option to select a dotted line.

7. Save the changes to the document.
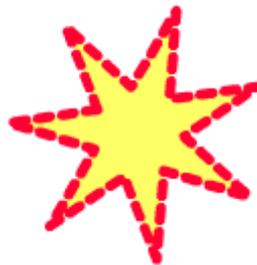
Exercise 9.   Using the pencil tool

1.   Create a new blank Flash file.

2.   Select the **Pencil** tool.

Look at the properties panel along the bottom and you will notice that the options for the pencil tool are the same as the last stroke options you used. In this case they will most likely be the same as the settings you changed for the stroke around your star in the last exercise.

3.   Change the stroke options as shown below.
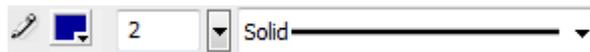
4.   Use the pencil tool to draw a small fish on your stage. Make sure there are no gaps in the outline of your fish.
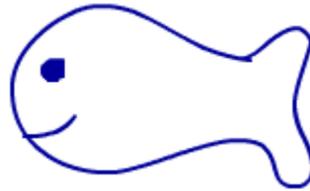
As long as you left no gaps around the edge of the shape you drew, you will now be able to apply a fill to the shape you have drawn.

5.   Select the **Fill** tool.

6.   Select a light fill colour from the **Fill colour** selector.

7.   Click inside the fish to apply the fill colour.
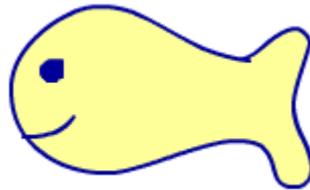
In addition to being able to change the stroke options for the pencil tool, you can also change the pencil mode options.

8. Select your **Pencil** tool and then locate the **Pencil Mode** icon ⅃. at the bottom of the toolbar. If you can't see it because you are using a small screen size, you may need to click the ⏩ icon at the top of the toolbar to show the icons in two columns.

Each of the pencil modes determines how your pencil follows your mouse movements as demonstrated below.

Straightens the lines as you draw them with the pencil

Smoothes the lines as you draw with the pencil

Follows your mouse movements exactly, without smoothing or straightening the lines

9. Make sure the **Smooth** option is selected for pencil mode.

10. Use the pencil to write your name, leaving plenty of room underneath.

11. Now try writing your name again in the available space using both the **straighten,** and the **ink** pencil modes.

12. Close the file (saving optional)

Exercise 10. Using the Brush Tool

1. Create a new blank flash file.

The way the brush tool works is quite different to the pencil tool. When you use the Brush tool, there are no stroke options in the properties pane like there is with the pencil. Instead, there are options on the toolbar for selecting how thick your brush will be. The colours are selected using the usual fill and stroke options. One big difference is that when you draw with the Brush tool, the lines you draw will use your fill colour instead of the stroke colour.

2. Select the **Brush** tool from the toolbar.

Look at the options at the bottom of the toolbar. You may need to show buttons in 2 columns to be able to see all of them if they don't fit on your screen. Note that depending on the options selected, some of the icons may look the same so move your mouse over them until you see your tool tip to make sure you're selecting the right one.

3. Hold your mouse on the **Brush Size** icon and select the last option (the largest brush size).

4. Hold your mouse on the **Brush Shape** icon and select the second option.

Note   If you are using a graphics tablet with a pen like the one pictured to the right, you may also have icons that turn on additional options . These options can vary your brush strokes based on how hard you press with the pen and what angle you hold the pen.

5. Select a dark fill colour and then draw the same fish that you drew in the previous exercise.

You will notice that the brush shape means that the lines are thinner in some parts depending on which direction your mouse was moving. Sometimes it is easier to draw freehand with the brush tool than it is with the pencil tool, especially if you are using a graphics tablet.
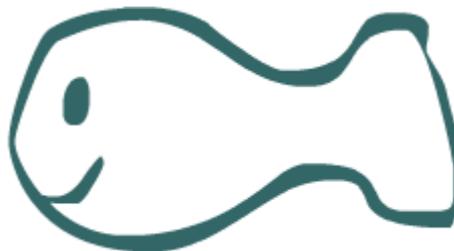
Exercise 11. Using the Pen Tool

The pen tool is used for drawing straight lines and curves rather than freehand shapes. It can be a little confusing if you're not familiar with it but once you've made a few shapes with it you should be more comfortable with it. The pen too works by creating **Line Segments** which are joined up with **Anchor Points**. The line segments can be either straight or curved and are controlled by the anchor points using **Direction Points**.

The following example shows straight and curved lines created using the pen tool

Anchor point

Line segment

Curved Anchor point

Direction point
(controls the direction and sharpness of the curve)
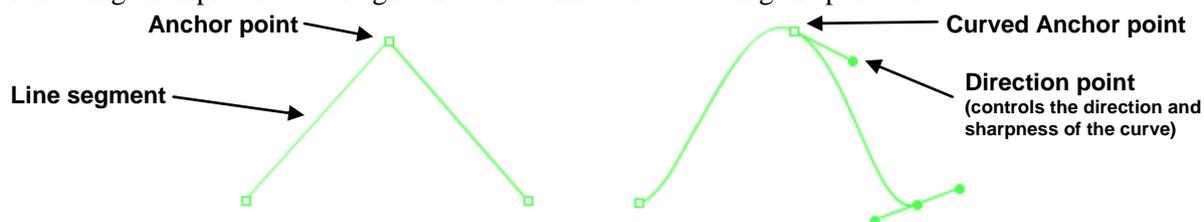
We'll start by using the pen to make a shape with straight line segments

6. Select the pen tool.

7. Click in the top left area of your stage to add an anchor point.

8. Click to the right to make another anchor point.

9. Move your mouse below the first two anchor points and click to add a third one.

10. Move your mouse over the first anchor point you created. When you see a small circle appear you will know you're back to your starting point.

11. Double-click on your starting point to end placing anchor points and close the shape. If you only single click, then the next time you add an anchor point to start a new shape, Flash might assume you are continuing the current shape and join them together. Double-clicking indicates that you are done.

12. Select the fill tool, along with a suitable fill colour and then click in the closed shape to fill it. Note that this will only work if you close the shape by placing the last anchor point on the starting anchor point.
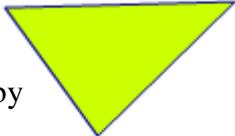
Now we'll try using the pen tool to create curved line segments

Note   Many vector image editing applications such as Adobe Illustrator also have a pen tool or something similar.

13. Select the Pen tool

14. Move your mouse to a blank area on your stage, making sure you have plenty of room to the right of where you click.

15. Click and drag to the right, then release your mouse. As you are dragging, direction points will come out of the anchor point. The longer you drag, the more gradual the curve will be. The direction of the direction points controls the angle of the curve. The following examples show how the direction points can shape curves.
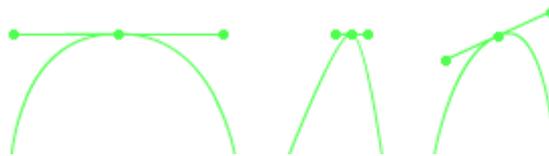
16. Move your mouse upwards and to the right, then click and drag to create another curved anchor point.

17. Move your mouse downward and to the right, then double-click. Hold your mouse on the second click and then drag to create your third curved anchor point. Because you double clicked the line will now be finished when you release your mouse. Your curved line should look similar to the example below. The direction and sharpness of your curve will depend on how you dragged your mouse.

18. Create another wavy line to practice using the tool.
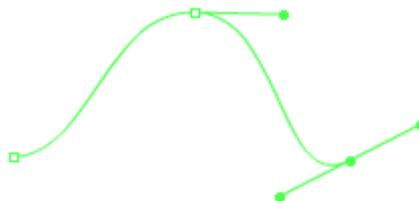
Exercise 12. Modifying Anchor Points

19. Click the Subselection tool.

20. Click on one of your non-curved anchor points on the triangle and drag it to modify its position.
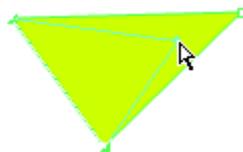
21. Click on one of the curved anchor point. Not only can you move the anchor point but you can also modify the direction points. Drag the direction points to modify the curve.
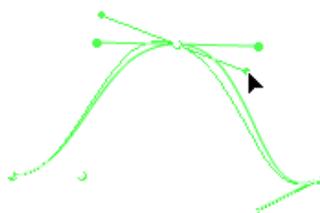
Exercise 13. Pen Practice

1. In a new Flash document, try creating the following shape using the Pen tool and the use the fill tool to fill the shape afterward. The second example shows a hint on what types of anchor points to add. The anchor points on the top edges are both curved anchors points while the ones in the middle are non curved.

2. Choose a suitable stoke colour and thickness before you draw the shape.
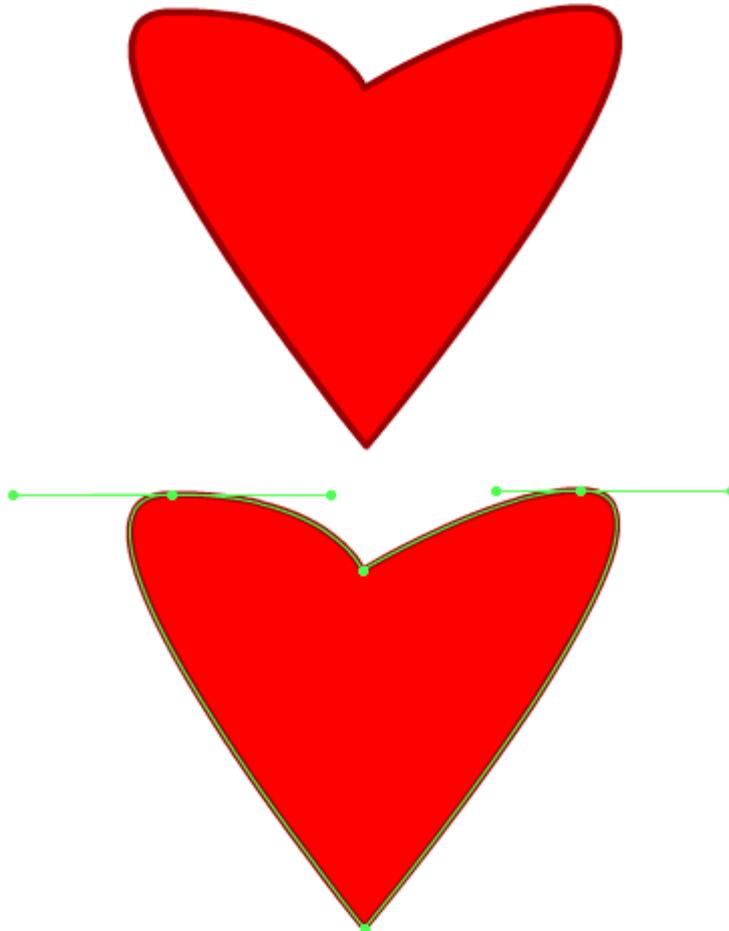
3. Save the new document as *Heart*.

Exercise 14. Shape Practice

1. Try to create the following image using the tools you have learned.
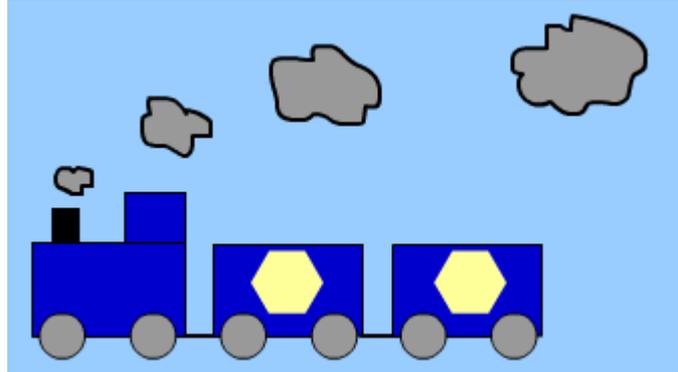
Tip   You can change the background colour of your stage by making sure nothing on the stage is selected so your document properties are showing at the bottom. Then you can select a colour using the Background option. Background: [ ]

2. Save the file as *Train*.