



# Using Flash

## More Motion

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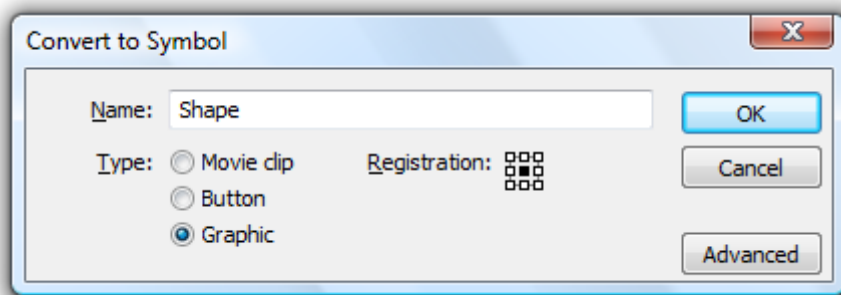
## Exercise 1. Motion Guides

When you are creating motion tweens, usually the object you are animating will move in a straight line from one point to another. If you want to control the way your object gets from the starting point to the finishing point, you can use a motion guide. We'll start with a simple animation to demonstrate before using motion guides in something more complex.

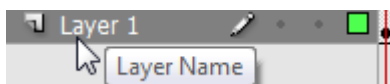
1. Create a new Flash file.
2. Create an object on the stage.



3. Select the object and convert it in to a **Graphic** symbol by selecting **New Symbol** from the **Insert** menu or by pressing **F8**.




4. On the **Layers Panel**, rename by **double clicking** the layer name.



5. Enter *Animation* as the new layer name. You only have one layer at the moment but naming layers is a good habit to get in to for when you have more than one.
6. Click on Frame 24 in the timeline. Remember that a standard animation is set to play at 12 frames per second so Frame 24 would be 2 seconds in to the animation.
7. From the **Insert** menu select **Timeline** and then **Keyframe** (You can also **right click** on the frame and choose **Insert Keyframe** or you can press **F6** on your keyboard).




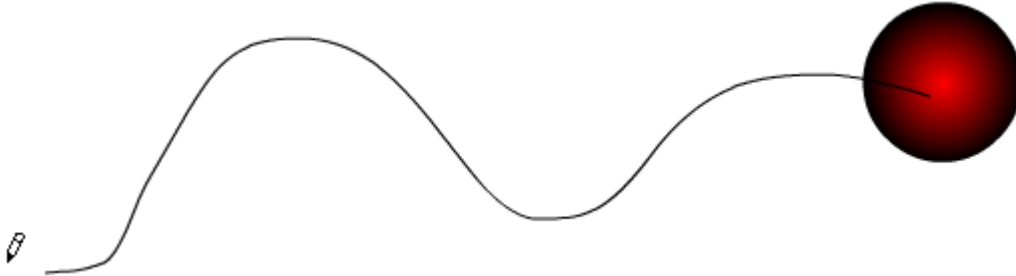
8. **Right click** on the *Animation* layer and choose **Add Motion Guide** or click the icon  at the bottom of the **Layers Panel**.



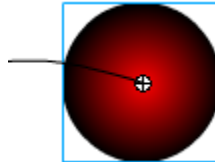
A new layer will be added above the animation layer. A guide layer is a special type of layer that you can use to guide motion on a normal layer.

9. **Right click** on both layers and select **Properties**. You will see that the guide layer will have *guide* selected in the properties while the *Animation* layer will have *Guided* selected in the properties.

10. Make sure the *Guide* layer is selected. This is the layer we will use for drawing a motion guide.
11. Select the **Pencil Tool** .
12. Draw a wavy pencil line from the object to another point on the stage.



13. Click on Frame 1 in the timeline.
14. Drag the object (remember you can hold down the **Ctrl** key to temporarily select the **Move tool**) so that the dot in its centre is on the beginning of your guide line.



15. Click on frame 24 in the timeline.
16. Drag the object so that the dot in its centre is on the other end of the line.
17. **Right click** between Frame 1 and 24 on the Animation layer and select **Create Motion Tween**.
18. Press **Ctrl Enter** to test the animation. The object should travel along the guideline as it animates.
19. Close the file (you can save it for later reference if you wish)

## Exercise 2. Creating an Object From Symbols

In an earlier exercise you created a graphic symbol, allowing you to use the same shape repeatedly in an animation. A **Movie Clip Symbol** allows you to create a symbol that includes animation within the symbol. The ability to have animation within animation adds new possibilities, allowing you to do things that wouldn't be possible otherwise. Movie clip symbols also allow options that aren't available with a regular graphic symbol.

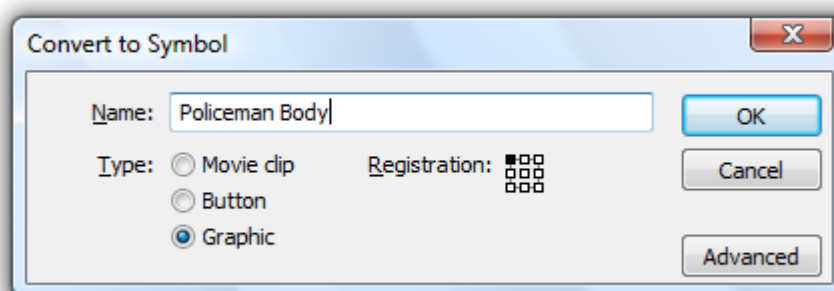
In the following exercise we will create a movie clip that contains walking movements for a character. We will then be able to make that figure walk around the stage.

1. Create a new blank Flash file.
2. Create the following object (or a better looking one if you're more artistic) on your stage using the drawing tools you have learned.

If you have trouble, see the end of this chapter for a step by step example on creating the head part (if you're viewing these exercises on your computer [click here](#) to go to that page now).

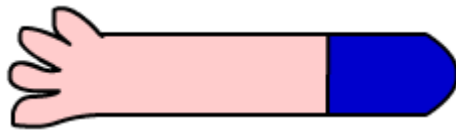



3. Select all parts of the object.
4. From the **Modify** menu select **Convert to Symbol (F8)**.
5. Create a **Graphic** symbol named *Policeman Body*.



6. Before continuing, save your animation with *Policeman* as the filename.

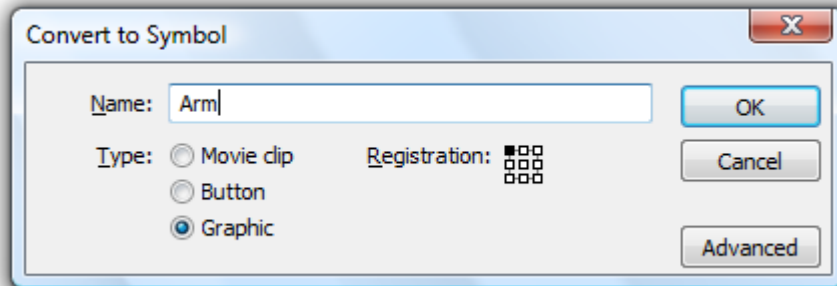
7. Create a new object which looks like the one shown below.



**Tip:** If you want your colours for parts such as skin and shirt to match the colours in the parts you have already drawn, you can use the eyedropper tool  to click on those parts you have already drawn when you are selecting colours.



8. Select all parts of the new object and create a new **Graphic** symbol called *Policeman Arm*.



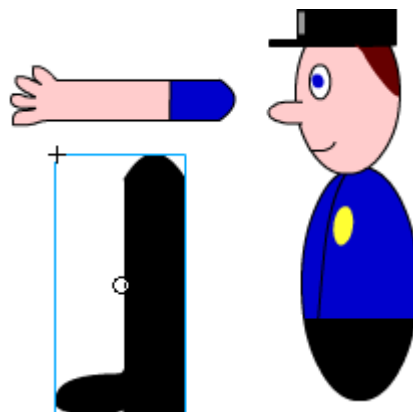
**Note:** If you wanted individual parts of the policeman to be animated, such as the eyes blinking or mouth moving, you would need to create them as separate objects as we will be doing with the arms and legs.

We will be able to use this symbol later for both the left arm and the right arm. Before we do that though, we will create a third symbol to use for the legs.

9. Now create a leg that looks like the following example.



10. Select all parts of the leg and make a new **Graphic** symbol called *Policeman Leg*.

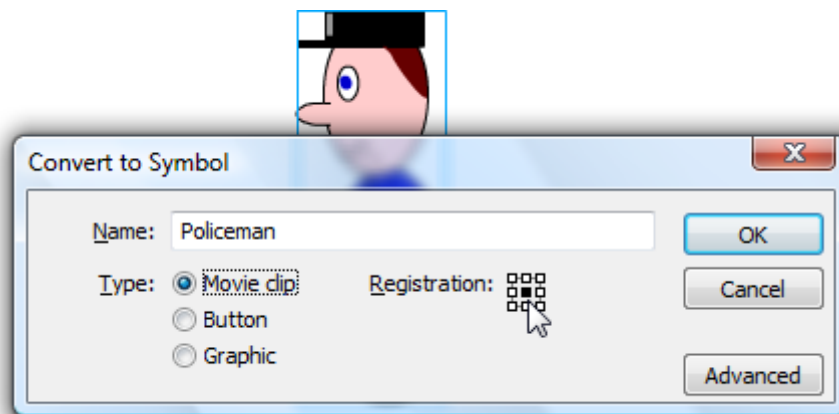


You should now have the shapes you need to put together the animated Policeman.


11. Save your work before continuing.

### Exercise 3. Creating a Movie Clip Symbol

1. Remove the arm and leg from the stage (click on each one and press **Del** on your keyboard). Both will still be in the library so we can retrieve them from there later when needed.
2. Select the body segment of the policeman picture.
3. Convert the selected object to a **Symbol** named *Policeman*. This time, instead of making it a **Graphic** symbol, it will need to be a **Movie clip** Symbol. Click on the middle registration point (this controls which part of the symbol is used as the main reference point for things like animation).



You will notice in the **Library** panel that the **Movie clip** symbol has an icon next to it that is different from the **Graphic** symbols

|   |                |       |
|---|----------------|-------|
|  | Policeman      | Movie |
|  | Policeman Arm  | Graph |
|  | Policeman Body | Graph |
|  | Policeman Leg  | Graph |

4. Double click on the selected *Policeman* symbol on the stage, or on the symbol's icon in the layers panel to edit the symbol.

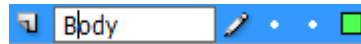
Below the layers panel and timeline you will now see the name of the scene (Scene 1) followed by the name of the symbol you are editing. We will now create an animation using the symbols we have already made. This animation will be part of the movie clip symbol.




**Tip:** Remember to save often (**Ctrl S**). Don't let that inevitable crash or power failure wipe out your good work. Don't wait to be reminded

## Exercise 4. Adding Symbols to a Movie Clip


1. Make sure you are still editing the movie clip symbol.
2. Rename the layer in the layers panel as *Body*. Remember you can rename a layer by double clicking on its name.




The policeman body symbol should still be visible on this layer.

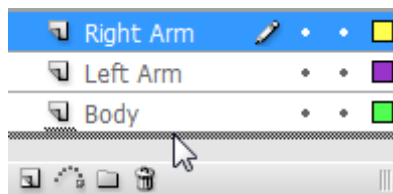
3. Create a new layer by clicking on the **Insert Layer** icon  at the bottom of the layers panel.
4. Rename the new layer *Left Arm*.
5. From the **Library** panel, drag the *Policeman Arm* symbol on to the stage.


| Name   | Type  |
|--|-------|
|  Policeman      | Movie |
|  Policeman Arm  | Graph |
|  Policeman Body | Graph |
|  Policeman Leg  | Graph |

6. Use the **Free Transform tool**  to rotate, resize and position the arm so that it appears like the example below.



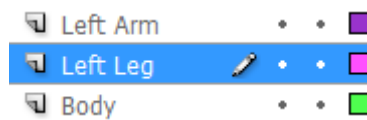
7. Create a new layer by clicking on the **Insert Layer** icon  at the bottom of the layers panel.
8. Rename the new layer *Right Arm*.
9. Drag the Right Arm layer so that it is beneath the Body layer. This will make the right arm in our animation appear behind the body.



10. Make sure the *Right Arm* layer is still selected and drag another instance of the *Policeman Arm* symbol from the **Library** panel on to the stage.
11. Use the **Free Transform tool**  to rotate, resize and position the arm so that it appears like the example below.



12. Create a new layer called *Left Leg*.
13. Make sure the *Left Leg* layer is above the *Body* layer and below the *Left Arm* layer.



**Tip:** When you add new layer it will appear above the layer you have selected. This means you could select the *Body* layer first, to make sure the new layer appears just above it.

14. Drag an instance of the *Policeman Leg* symbol from the **Library** on to the stage.
15. Position the leg so that it looks like the example below.





16. Create a new layer called *Right Leg* and place it below the *Body* layer and above the *Left Arm* layer.
17. Add a new instance of the *Policeman Leg* symbol from the **Library**.
18. Position the right leg so that it looks like the example below.



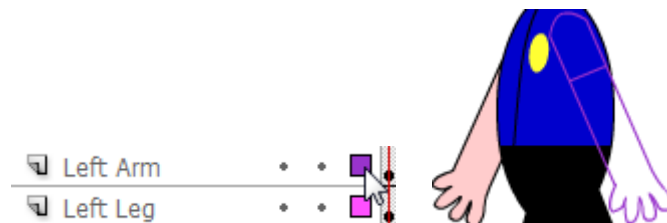
### Exercise 5. Checking Layers

One of the most common mistakes people make with animation is not putting objects on the correct layer. When people run in to problems, it is often because they have placed more than one object on the same layer which makes it difficult to get your animation working the way you want it to. There are a few ways of checking that things are on the correct layer. One way is to simply click on objects.

1. Click on the right arm of your Policeman. If it has been placed on the correct layer, the name of the layer should be highlighted in the Layers panel.
2. Check the **Layers** panel to make sure the *Right Arm* layer is highlighted.
3. Click on each part of the policeman to make sure each part is on the correct layer.
4. If there are any problems, make the necessary changes now by removing or adding symbols on layers as needed. It's easier to get it right before we start any animation.

Another way you can check the layers is by clicking the coloured squares next to each layer.

5. Click on the coloured square next to the *Left Arm* layer. Any objects on that layer will now be shown with only an outline appearing in the same colour as the square.



6. Click the same square to show the arm normally again.

## Exercise 6. Creating the Animation

We will create an animation which makes it look like the arms and legs are moving in a walking motion.

1. Select the *Body* layer in the **Layers** panel. This is the only layer that won't be moving but it will still need to be visible for the duration of the animation.
2. Select frame 12 on the timeline (make sure it is still on the Body layer).

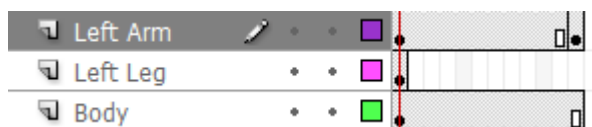
At 12 frames per second this frame will be 1 second in to the animation.

3. Right click on the frame and choose **Insert Frame**.

Since this layer won't be animated it doesn't need to be a **Keyframe**. It only needs to be visible up to frame 12. All of the frames from 1 to 12 should now be filled in. Don't worry if your other layers appear to have vanished. We haven't added additional frames for the other layers yet but we are just about to.



4. Select the *Left Arm* layer in the **Layers** panel.
5. Select frame 12 in the timeline on the same layer. Since this one will be animated it will need a **Keyframe** instead of a regular frame.
6. Right click on the layer and select **Insert Keyframe** (or press **F6** on your keyboard). You will notice that the **Keyframe** on this layer looks slightly different from the regular frame on the Body layer.



**Note:** If you add a Keyframe and the frame has a hollow dot instead of a black dot, it is because there are no objects on that layer.

7. With the *Left Arm* layer still selected add a **Keyframe** at frame 6 in the timeline.
8. With frame 6 still selected, change the position of the arm so that it looks like the example below.

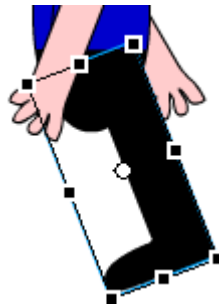


You might need to click on frame 1 or frame 12 to make sure that the shoulder is in the same spot at frame 6

9. Right click between frame 1 and 6 and choose **Create Motion Tween**.
10. Add another motion tween between Frame 6 and 12.



11. Press **Ctrl Enter** to test your movie (or select **Test Movie** from the **Control** menu). Your right arm and both legs will only be visible during the first frame, but you should see the body for the whole animation, as well as seeing the left arm moving in a swinging motion during the animation.
12. **Close** the test movie window.
13. Repeat steps 4 to 10 so that your right arm animates with a swinging motion like the left arm.
14. Select the *Left Leg* layer.
15. Insert a **Keyframe** at Frame 12 on the *Left Leg* timeline.
16. Insert another **Keyframe** at frame 6 on the *Left Leg* timeline.
17. With frame 6 still selected, reposition the leg so that is behind the policeman like the example below.



18. Add motion tweens between each of the **Keyframes** as shown below.



19. Repeat steps 14 to 18 so that the *Right leg* is also animated.

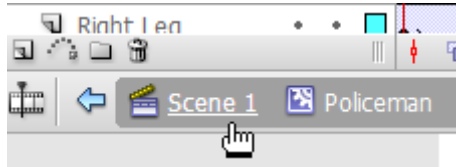
**Tip:** Since the policeman is on a slight angle, you can make him look a little more natural by placing the right lag and arm slightly further to the front.

20. Press **Control Enter** to test the movie again. Remember that when you test a movie from a saved flash **.fla** file, an up to date **.swf** version of the movie will also be exported to the same location your file is saved in.
21. Save the changes to your file.

## Exercise 7. Creating a Background

Now that we've finished animating our movie clip symbol, it's time to make use of it in an animation.

1. Exit symbol editing by double clicking outside the policeman, or by clicking the **Scene 1** button underneath the Layers panel.

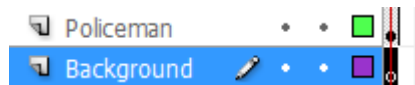


We're going to create a background for the scene so we'll move him out of the way for a moment.

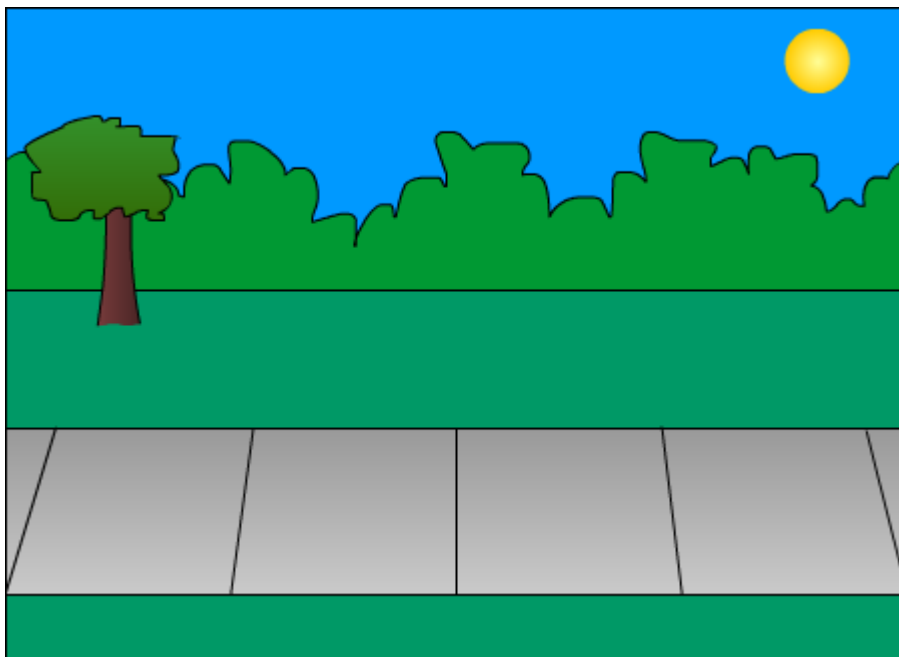
2. Move the policeman off to the right side of the stage (so that he is outside the white area).

Once you are back in to editing your scene you will notice that there is now only one layer and only one frame in the timeline. All of the layers and frames that you have just been editing are all part of the *Policeman* **Movie Clip Symbol**, not the main movie.

3. If you haven't already renamed the layer that the policeman is on we'll do it now. Call it (you guessed it) *Policeman*.
4. Create a new layer called *Background* and move it below the **Policeman** layer.



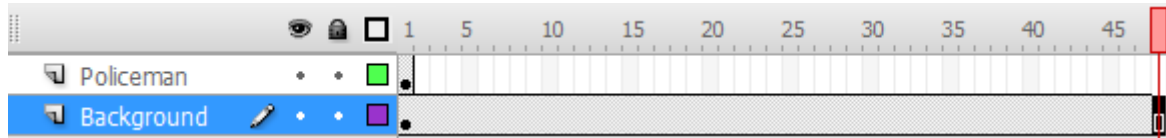
5. Make sure the background layer is still selected. Use your shape and drawing tools to create a background for your scene. You can use the one below as an example or create your own.



## Exercise 8. Using a Movie Clip Symbol

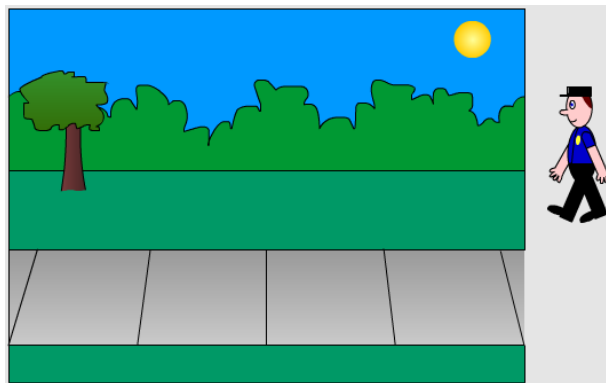
Now it's time to add our animated policeman. First we need to make sure our background is visible for the whole duration of the animation so we will need to add frames for the background layer.

1. Our animation will last for 4 seconds (48 frames), so **right click** on frame 48 of the background layer and select **Insert Frame**.



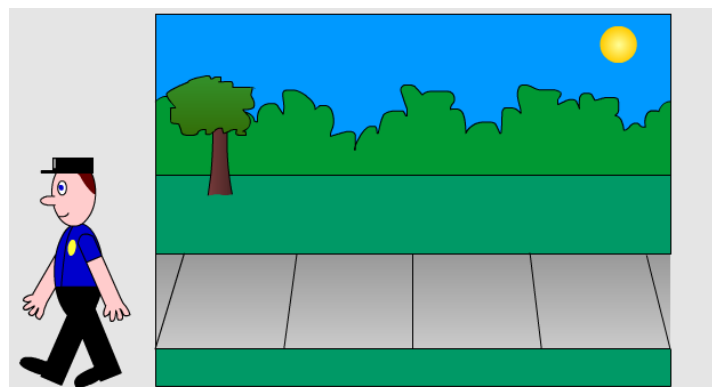
Our animation will involve a single motion tween with a motion guide. We want our policeman to walk across the stage following a curved path. We will make him a different size at the end point so it looks as though he is growing (getting closer) as he moves.

2. Select Frame 1 on the *Policeman* layer.
3. Resize and position the policeman so that he is positioned like the example below (still off to the side of the stage).

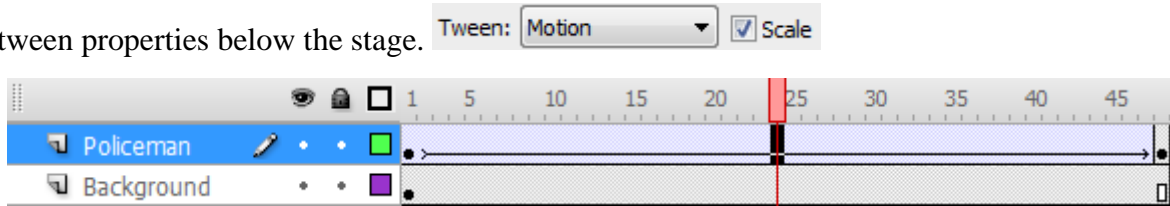


**Tip:** When you are resizing, use the corner and hold down shift to make sure the height and width stay in proportion to each other.

4. Add a **Keyframe** at frame 48 on the *Policeman* layer.
5. With frame 48 still selected, move and resize the policeman so that he is slightly larger, slightly lower and on the other side of the stage as shown.




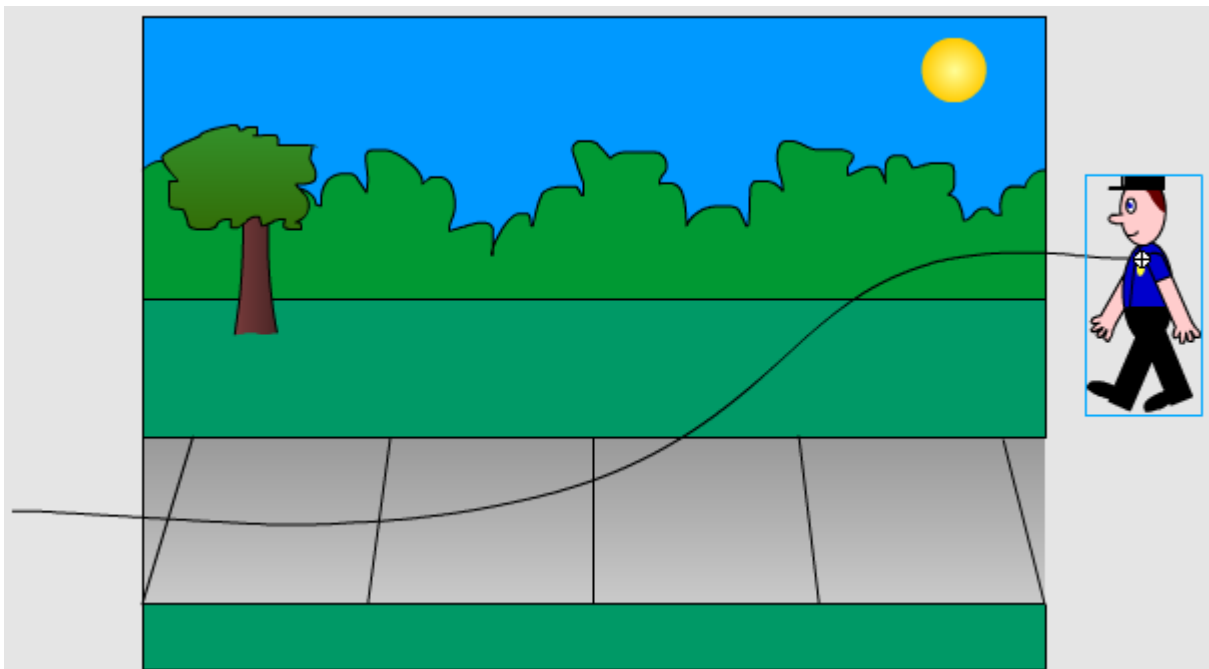
6. Add a motion tween between frame 1 and frame 48. Make sure the **Scale** option is ticked in the tween properties below the stage.



7. Press **Ctrl Enter** to test your movie. The arm and leg motion that was part of the Movie Clip Symbol will work as the symbol is used on your stage. Since it's a symbol, you could drag more instances from your library and have a whole group of policeman marching across your stage with perfect precision. Try it later if you want.

At the moment, the policeman will be moving in a straight line. We'll use a motion guide to curve his path a little.

8. Close the movie test to return to your stage.
9. **Right click** on the *Policeman* layer and select **Add Motion Guide**.
10. Make sure you have the *Guide* layer selected (not the policeman layer).
11. Select the Pencil tool  and drag a curved line across the stage.
12. Select frame 1 and move the Policeman so that the small dot in the middle of the policeman locks on to the right end of the guide line.

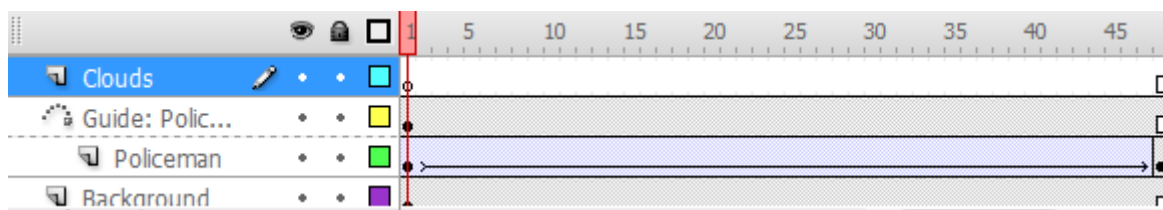


13. Select frame 48 and move the policeman so that he locks on to the left end of the guide line.
14. Test the animation. The policeman should now follow the curved line as he moves.

## Exercise 9. Movie Clips that Don't Move?

You can use movie clips for symbols that won't include any animation but why would you want to? Well for one thing, a movie clip symbol can do things a Graphic symbol can't, like use some of the built in effects. We'll use one such effect in the following steps to add some 3d clouds to our animation.

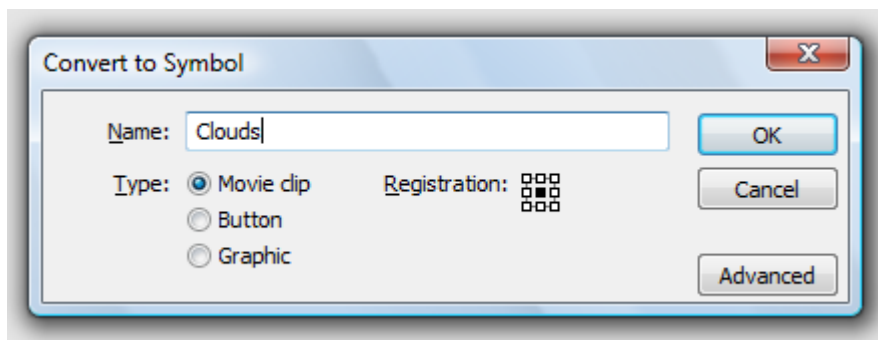
1. Add a new layer called *Clouds* to your animation. Make sure the new layer is on top of all the other layers.



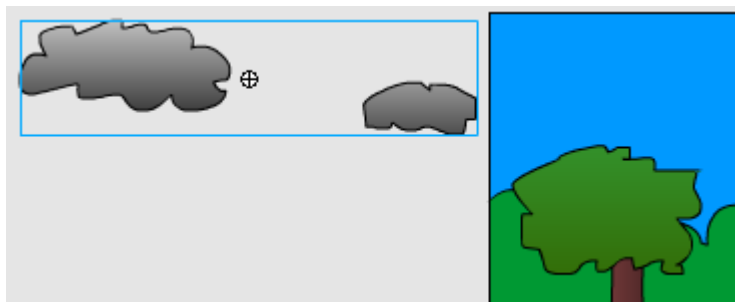
2. Using the tools available, draw a cloud on the new layer.
3. Draw a second cloud near the first one.
4. Select both clouds. We will make both clouds in to a single object so that they can move together.



5. Create a new Movie Clip Symbol called clouds



6. We will animate the clouds so that they move across the sky in the top of the movie. Position the clouds off the left side of the stage.



7. Create a **Keyframe** at Frame 48 and position the clouds on the other side of the stage.

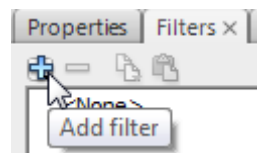
8. Add a **Motion Tween** to the *Clouds* layer so that the clouds move from one side of the stage to the other.

The last thing we'll do is use a filter to change the look of the *Clouds* symbol. This wouldn't be possible if we had made the clouds in to a regular Graphic symbol.

9. Make sure the *Clouds* symbol is selected at frame 1 on the timeline.
10. Click the **Filters** tab in the **Properties Panel** below the stage.

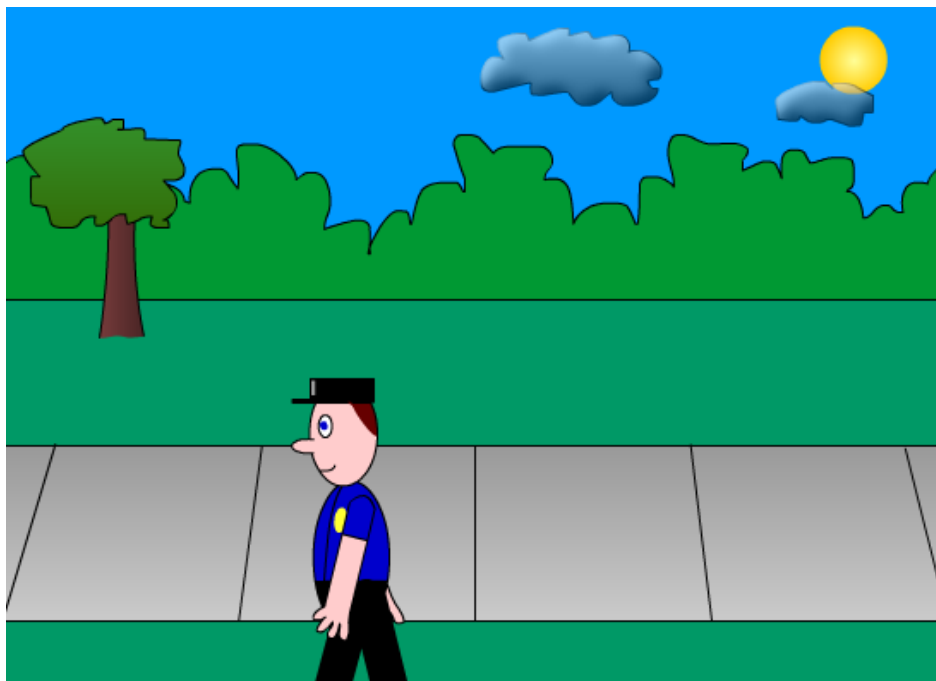


11. Click the **Add Filter** button. 



12. Select **Bevel** from the menu that appears.
13. From the options to the side, set the quality to **High**.
14. Try some of the other options until you like the look of your clouds.
15. You might need to go to frame 48 and check that the options for the **Bevel** are the same as they are on frame 1 (including the **Strength** and **Distance** options).
16. Test your animation to see how the clouds look.
17. Save the animation when you're satisfied with the changes.

**Tip:** You could also make the clouds semi transparent by changing the **Colour** option of the symbol (in the **Properties Panel**) to **Alpha** and adjusting the transparent amount.





## Animation Challenge

Use what you have learned to create an animation like the one below. The car should be travelling along the road (using a motion guide) and the wheels should be rotating (so the car will need to be a Movie Clip Symbol with rotating wheels inside that symbol).




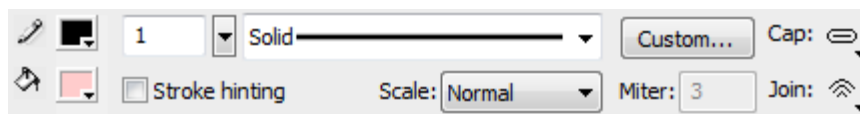
Refer to <http://oneil.com.au/pc/flash.html> for a completed example that you can refer to if you get stuck.

## Policeman Body Tips

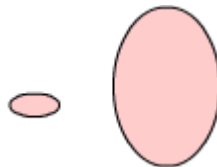
**Note:** When you follow these instructions, your policeman might not look identical to the one in the exercises since we're not following any exact measurements. Even the one in these steps below will differ slightly from the one shown in the main exercises. You will probably find most of these steps a lot easier if you zoom in since some parts of the face (such as the eye) will be quite small.

We'll start with the head.



1. Select the **Oval** tool  (remember it is grouped with the **Rectangle** tool)
2. Select a thin black line style for the stroke (outline) with a skin colour for the fill. The colour options in the Properties panel below your stage should look similar to the ones below.



3. Draw an oval shape for the head and another smaller oval for the nose as shown below.






We're going to use the eraser tool to remove the right side of the nose before attaching it to the face.

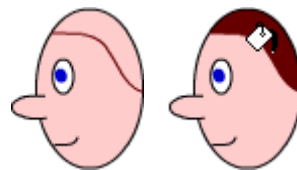
4. Select the **Eraser** tool. 
5. Use the eraser to remove the end part of the nose.
6. Use the **Select** tool  to move the nose on to the face (you hold down **Ctrl** to temporarily activate the move tool so you don't have to click the icon). Remember to make sure you **double click** to select the stroke as well as the fill.




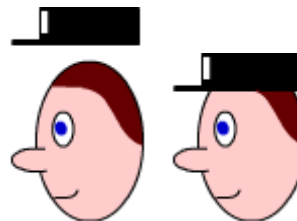
7. Select the Oval tool again. Keep the thin black outline but this time select a solid white fill colour.
8. Draw a small oval for the eye (If you're worried you might not get it the right shape or size the first time, draw it off to the side. Then if you're not happy with it, you can simply delete it and try again).
9. Select the Brush tool.
10. Select a suitable brush size and set the fill colour to the colour you want the middle of the eye to be.
11. Use the brush to paint a small dot inside the eye.



12. Select the **Pencil** tool . You should still have a thin black line in the stroke settings.
13. For drawing the mouth, make sure the **pencil mode** at the bottom of the toolbar is set to **Smooth**. .
14. Draw a small line for the mouth.
15. With the pencil tool still selected, change the stroke colour to the colour you want the hair to be.
16. Draw a hairline on the head.
17. Select the Fill tool. .
18. Set the fill colour to the same colour as the hairline and click inside the hairline area to fill with the hair colour.



19. Select the **Rectangle** tool. .
20. Set both the Stroke and Fill colours to black.
21. Draw one rectangle for the hat, with another thinner rectangle making up the front of the hat. You might want to draw it above the head first and then move it in to place afterward.
22. Add the badge on the hat (in this example it's been done with the rectangle tools, though it could be done with other tools).



23. Move the hat in to place.

Head and hat complete! Now you should be able to use the same techniques to create the body and the other parts of the animation.

If you are reading these tutorials on your computer [click here](#) to return to the exercise where you were creating the policeman.