




Animation in Flash

When you finish this exercise you will know how to create animation using frame animation.

Frames

When you start Flash CS3 you will see the timeline above the drawing area. In the illustration we can see that the current frame is frame 1, indicated by the red marker, . You can also see that there is just one frame. There is also just one layer. At this time there is nothing in layer 1, frame 1 because there is a hollow circle in frame 1, . If we draw something in that frame the circle will be solid black, .



When a Flash movie plays, it starts in frame 1 and continues to play each frame until it gets to the last frame, then it starts again in frame 1 and plays continuously. We create animation by having different content in some of the frames, just like a movie. The frames where the content changes are called **keyframes**.

- Draw a simple face in frame one.
- Create a keyframe in frame 20 by right clicking in frame 20 (control click on the Mac) or by clicking in frame 20 and selecting insert keyframe from the pop-up menu, or by selecting Insert, Timeline, keyframe from the menu.



- The face appears in all of the frames 1-20 exactly the same as in frame 1. We made frame 20 a keyframe because we will make a change to frame 20.
- In frame 20, erase one eye and make the face wink.
- Test the movie by selecting Control, test movie. (*Make a note of the hot key because you will be testing your movies often: CTRL+Enter on the PC; Apple+Return on the Mac.*)
- The wink is a little bit fast, so we will add a few frames at the end so that the wink appears longer.
- Create a frame in frame 25 by right clicking in frame 20 (control click on the Mac) or by clicking in frame 20 and selecting insert frame from the pop-up menu, or by selecting Insert, Timeline, frame from the menu. We don't need a keyframe because frame 20-25 will all be the same picture of the clown winking.
- Test the movie again, then experiment with the movie by inserting and removing a few frames to get a nice speed to the wink sequence.



Moving Car: Motion Tweening

If we want to make a car move across the stage, we could use a sequence of frames and each frame we would move the car a few pixels, but there is an easier way. We create the first and last frame of a sequence and tell Flash to figure out all of the “between” frames. This is called motion **tweening**. Flash can also use shape **tweening** to change a red square to a blue circle or other types of changes.

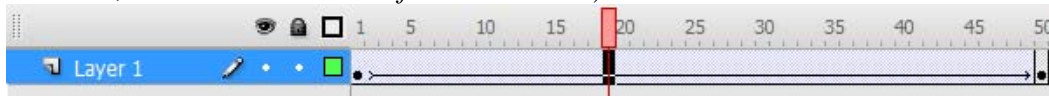
- Start a new project and save it as car.
- Modify the stage so that it is 500 wide x 200 high.
- Draw a small car and place it just off the stage on the left.



- Create a **keyframe** in frame 50 and move the car off the stage on the right.



- If you test the movie now you will not see the car at all because it is not on the stage anywhere.
- Right-Click (control-click on the Mac) on any frame between 1 and 50 and select “create motion tween”. (*You can also click a frame and then select Insert, timeline, create motion tween from the menu.*)



- You should see an arrow on the timeline between frames 1 and 50. If you see a dotted line instead, it means that flash could not create the tween. Most likely it is because there is nothing in frame 50.
- Test the movie to see the car move from left to right. When it leaves the stage on the right the movie starts over and you see the car appear on the left again.
- Name the layer with the car “car” and do not put anything else on that layer. In order for tweening to work there must be just one drawing on the layer.
- Inspect the timeline by dragging the red marker across the frames. You can see the position of the car in each frame.
- Remove a few frames and test the movie. If there are fewer frames the car will move faster, but the movement will not be as smooth.
- Expand the timeline by dragging the solid circle in frame 50 to the right. The car will move slower, but the movement will be smoother.
- Try changing the frame rate of the movie and testing again. (*From the menu select Modify, document, to open the window for the document properties, or open the property window and click on the stage.*)

Experiment: Make a rocket ship blast off.

Shape Tweening

- Start a new project and save it as shape.
- Draw a red circle in frame 1.
- Create a keyframe in frame 15.
- Delete the red circle and draw a blue circle in the same place.
- Right-Click (control-click on the Mac) on any frame between 1 and 15 and select “create shape tween”. (*You can also click a frame and then select Insert, timeline, create shape tween from the menu.*)
- Scrub across the frames by dragging the red marker. The picture will show gradual changes in both the color and shape.



When you test this movie it will change gradually from a red circle to a blue square and then abruptly switch back to a red square when the movie goes from frame 15 back to frame 1.

- Create a keyframe in frame 30.
- Copy the circle from frame 1 to frame 30. Hold shift when you paste it so that it is exactly the same spot.
- Right-Click on any frame between 15 and 30 and select “create shape tween”.
- Test the movie. The movie now goes smoothly from a red circle to a blue square and then gradually goes back to a red square.

You can save time by drawing the circle in frame 1, then creating keyframes in both 15 and 30 before you make the change to frame 15. The picture in 30 will still be the same as the one in frame 1.


- Move the picture in frame 15 to a new position.
- Scrub across the line and test the movie. The picture changes size, shape, color and position. **If you want to do both motion and shape, apply shape tweening.**

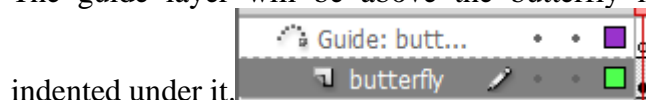
Experiment: Create a movie that has various kinds of animation. Remember to put each element that is animated on a separate layer, and apply shape tweening if you are doing more than one kind of tweening.

Guide Layers: The butterfly


Although moving in a straight line is OK, there is another type of motion tween that allows you to move an object along a twisting, curving path.

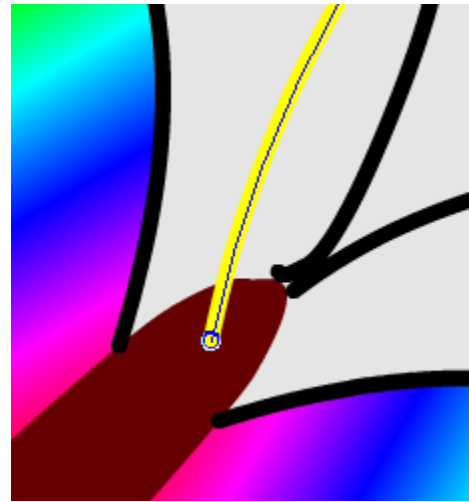
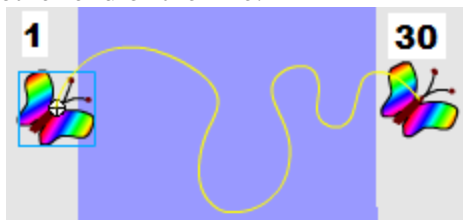


- Start a new project and save it as butterfly fla.
- Draw a butterfly and name the layer butterfly.
- Click on the add motion button  that is just below the layer names.
- The guide layer will be above the butterfly layer and the butterfly layer is



- Add a keyframe in frame 30 to the butterfly layer.

- Add a frame (not a keyframe) to the guide layer in frame 30.
- On the guide layer draw a loopy, twisting line from one side of the stage to the other.
- Turn on the magnet  The guide motion will not work if the registration point of the butterfly is not snapped onto the ends of the line.
- Zoom into to 800 so that you can see the registration circle on the butterfly and the end of the line in frame 1.
- In frame 1 move the butterfly so that the registration circle snaps onto the end of the line.
- Select frame 30 and attach the butterfly to the other end of the line.



- Test the movie. If the butterfly does not move along the line, remove the tween; zoom in and try to reconnect the butterfly to the line. It must be snapped to the guide line.

You will notice that the butterfly stays pointed in the same direction during the entire flight. You can make a more realistic movie by scrubbing along the timeline and add a keyframe whenever you want to rotate the butterfly; this is usually where the line changes

