Hinging Animation
Place hinges where they’d naturally occur to efficiently animate a character’s body parts.

**TIP**
**Consistency Matters.** The transformation point for a symbol must be consistent across keyframes containing motion tweens. If the transformation point shifts, the symbol will drift out of position during the tween.

---

**Move the Transformation Point**

The transformation point is the point around which Flash rotates an object. When you’re animating characters, the transformation point should be at the joint where two body parts connect, such as the shoulder or the knee.

To position the transformation point, first select the Free Transform tool and then click the body part symbol on the stage. The transformation point (a solid white circle) is initially aligned with the center point of the symbol. Drag it to the position from which the body part would rotate. For example, if you plan to swing your character’s arm, move the transformation point for the upper arm to the shoulder; likewise, move the transformation point for the lower arm to the elbow.

Once you’ve moved the transformation point for a symbol, it remains in that position until you move it again. That’s great because you’d rarely want to pivot a body part from its center!

---

**Animate the Symbol**

Using the Free Transform tool, rotate the symbol to animate it. The symbol rotates from the transformation point, so it’s easier to achieve a more natural movement. You can animate the symbol as you would any other, creating keyframes and applying motion tweens to create smooth movement.

---

**INSIGHT**
**Hinging Multiple Symbols.** You can hinge multiple symbols across different layers as if they were a single symbol. With the Free Transform tool selected, hold down the Shift key and select the symbols you want to hinge. The transformation point moves to the center point for the combined symbols. You can move the transformation point for all the symbols at once. For example, you can set a common transformation point for a foot, lower leg, and thigh to hinge at the hip and move the entire leg at once. The common transformation point remains only as long as the objects are selected.
Distribute to Layers

Don’t waste hours by copying symbols to layers and renaming each one; this tip will make it easy.

Layers Made Easy

Motion tweening animation requires objects to be on different layers. Copying and pasting each object onto its own layer is a tedious chore, but you can perform the same task with the Distribute to Layers command.
Select all the objects you need to distribute, whether they’re currently on the same layer or multiple layers. You can distribute any type of element on the stage, including graphic objects, instances, bitmaps, video clips, and broken-apart text blocks. When they’re all selected, right-click them, and choose Distribute to Layers. Flash moves each object to its own new, separate layer, and it names the layer for the object. (Layers for graphic objects that don’t have names are named Layer 1, Layer 2, and so on.) You can safely delete any layers that are now empty.
Walk Cycles

Almost every character has to walk at some point. Keyframes and a little know-how can get your character across the stage gracefully.

1. Take a Walk
Animation imitates life. To see how the body moves while walking, take a stroll. Notice that your right leg and left arm swing forward together, and so do your left leg and right arm. Pay attention to the length of your stride, the position of your foot, how your foot leaves the ground, and how it returns. Walk the way your character would walk, whether the character bounces happily or shuffles its feet.

2. Prepare Your Character to Walk
Animating a walk cycle is easiest if you design your character in 3/4 view. Create each section of the character as a separate symbol, with the appropriate name. For example, create symbols for the right foot, left foot, right thigh, left thigh, and so on. Then, convert the entire character and all its parts into a graphic or movie clip symbol; we will be working entirely inside this symbol to create our animation.
Press F8 to open the Convert to Symbol dialog box. Name and save the symbol. Right-click (Windows) or Control-click (Mac OS) each symbol. When they are all converted choose Modify > Timeline > Distribute to Layers.

The best way to create a walk cycle in Flash is to animate the character walking in place, as if on a conveyor belt, creating the entire walk cycle within the symbol. Use just enough frames in the walk cycle to create a seamless looping sequence, anywhere from 3 to 30 frames long, depending on the complexity of the animation. Then, use a motion tween to animate the character walking across the scene.

3. Create the First Leg's Positions
On the movie clip symbol's Timeline work with just one leg first. Determine the major walk positions you want to use. For Mudbubble Boy, I've created four major walk positions: the foot planted firmly on the ground, the leg just before it is lifted off the ground, the leg completely off the ground in its most rearward position, and the leg in its most forward position off the ground. Create a keyframe for each position, and use the Free Transform tool to rotate each leg symbol into the appropriate position.

If you don't have a drawn floor or ground, use a horizontal ruler guide as a reference point to ensure that the foot comes in contact with the ground appropriately. Using a guide can prevent the foot from drifting out of alignment with the rest of the body.

**INSIGHT**

More Frames Means Slower Movement. The more frames you insert between movements, the slower the animation will be. Experiment with the number of frames between each of your leg positions. To create the illusion that the character is heavy or carrying something heavy, include more frames when the foot is sliding back along the ground, so that movement is slower, and fewer frames while the leg is off the ground, returning it quickly to its initial position. To suggest the character is on a slippery surface, such as ice or a banana peel, include fewer frames when the foot is on the ground and more while it is off the ground.
4. Animate the First Leg
When you’ve created the major leg positions, you can animate the leg. Enable the Onion Skin feature and adjust the Onion Skin brackets to use your established leg positions as references. Then, create new keyframes across all the layers that contain your leg symbols. Use the Free Transform tool to rotate and position each leg symbol into an intermediate position relative to the keyframes you already created.

You could use motion tweening, but you’ll have more control over the leg positions if you modify them for each keyframe. Play your animation frequently to get real-time visual feedback on the work you’re doing.

5. Animate the Second Leg
When you’re satisfied with the movement of the first leg, move to the second. Unless there’s a specific reason that your character’s legs might move differently, such as a wooden leg, you can use the work you did on the first leg to move the second.

Delete the second leg entirely from the stage. Then, select all the frames and layers of your leg animation, right-click (Windows) or Control-click (Mac OS), and choose Copy Frames. Create a new layer or select the empty layer that your old leg symbol was in, and right-click (Windows) or Control-click (Mac OS) and choose Paste Frames.

Of course, if you simply use the other leg animation, both legs move at the same time—not a convincing walk. To alternate the legs, select the first half of the frames in the layers you just pasted. Then, drag those frames down the timeline and drop them after the end of the leg animation. Now, select the entire range of frames and drag it to start on frame 1. To delete any residual frames, right-click (Windows) or Control-click (Mac OS) and choose Remove Frames.
6. Create Depth for the Back Leg
The back leg and front leg shouldn’t look identical, because the back leg is further from the viewer. Let's work only with the leg symbols. Lock all layers except those that contain the back leg. Enable Edit Multiple Frames, and then move the Onion Skin markers to include the entire length of the timeline. Click on the stage and choose Edit > Select All. Now, all the symbols for the back leg in all the frames of the animation are selected. Using the Selection tool, click on any of the selected leg symbols to bring them into focus. In the Properties Inspector, choose Tint from the Color menu, select black for the fill color, and set a 30% tint. This gives the illusion that the back leg is in shadow. With Edit Multiple Frames still enabled, nudge the entire back leg animation up and to the right with the arrow keys. This creates some space between the legs and returns the perspective to the original 3/4 view. When you’re done, turn off Edit Multiple Frames.

7. Animate the Arms
Animating the arms for a walk cycle is much easier than animating the legs. Arms move relative to the legs, and you can swing them as much as you want to fit your character’s personality and mood. You can use frame-by-frame animation, as with the legs, or motion tweens, depending on the complexity of the movement.

As with the legs, animate one of the arms and then copy and paste its frames into a new layer for the second arm, and then shift the animation frames to move the arms alternately. Use the Edit Multiple Frames feature to add the same color tint to the back arm and hand, and use the arrow keys to nudge it into position.
8. Move the Character Across the Stage.
Because the entire walk cycle was created within a symbol, it's easy to make the character walk across the stage. Return to the stage and then drag an instance of the symbol onto the stage. Create a second keyframe for the end of the scene, and then move the instance to the other side of the stage. Right-click (Windows) or Control-click (Mac OS) on the frames and choose Create Motion Tween.

Play your animation to see the character walk across the stage. You may need to increase or decrease the frames in the tween if the character's feet appear to be slipping, but with some minor adjustments to the number of frames, you should find the appropriate length so that the feet seem to truly grip the surface.

TIP
Outlines Keep Things Clearer.
To stay focused on the area you're animating, and to keep things less complicated visually, consider displaying all layers except the layers you're working with. To display a layer as an outline, click the color fill box next to the layer name.