

idleworm Lesson 2: The Walk Cycle part 1

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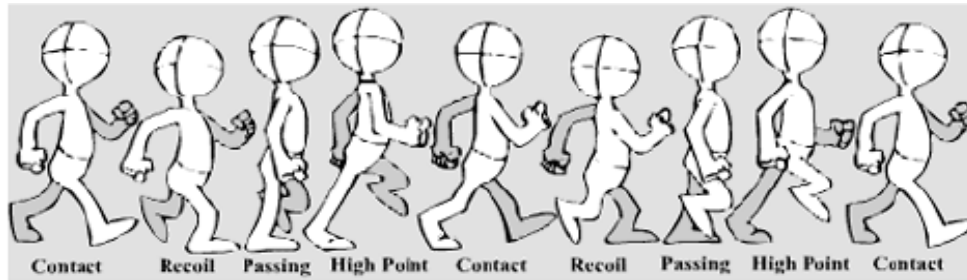


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Most sane people have a fear of animating walk cycles. Many events are happening at the same time, and it can seem overwhelming. A single mistake on your first drawing can wreck the rest of the scene. However, the process can be broken down into a series of steps which can go some distance in simplifying the process.

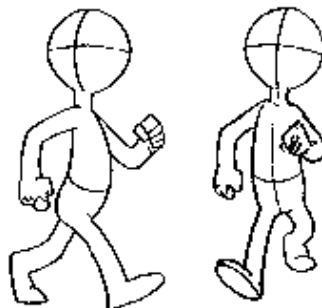
A walk cycle can be described by four distinct poses:

Contact
 Recoil
 Passing
 High Point



These four poses and a couple of inbetween drawings constitute a walk cycle. The single most important frame of the four is the contact pose. Once you draw it you have already determined 80% of the rest of your walk. If you make a mistake on your contact pose, it can be very difficult to correct later on. Therefore: pay close attention now and save yourself a world of pain.

Here is the contact pose in front and side view.



Look at the pose carefully. You will notice some very important details: The feet are at their furthest extension in the walk. That is their most extreme position in the cycle. That alone makes this the most critical pose in the sequence. You can plan an entire walk sequence just by laying out all the contact poses as they work into one another.

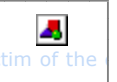
Some animators think that the recoil and high points are the most important poses because the head is at its highest and lowest positions. This is wrong. The contact pose is the fundamental building block of a walk cycle. If you do not start your cycle with this pose, then you are doomed. It's as simple as that.

When the right foot is forward, the right arm is back, and vice versa. This is called "counterpose". This is how nature keeps everything in balance when you move: one side of the body "opposes" the other. Good animation has these "opposing actions" all the time. If animation seems weak or unnatural to you, it is frequently because it lack opposing action. You can think of a walk as a series of "falls". The character propels

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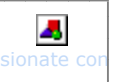
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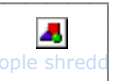
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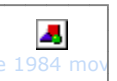
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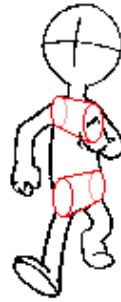


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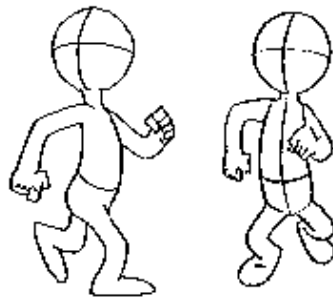
himself forward by leaning into the walk as he moves forward. His trailing foot constantly swings forward to catch himself before he moves on to the next "fall" in the sequence. It shares many attributes with the bouncing ball in tutorial 1. Look at the front on view.



I have drawn in imaginary cylinders to illustrate the orientation of the shoulders and hips. Again, as one is thrust forward, the other is thrust back. As one tilts up, the other tilts down.

Another name for this is "Torque". It is a fundamental principle of good posing. It should be an element of almost every figure drawing that you do. Michelangelo always used torque in his sculptures, creating dynamic poses, even in ones that were standing still. One hip takes the weight, while the other passively provides the balance. The body is very rarely symmetrical: indeed, symmetry can be your enemy.

Now look at the recoil pose, the second main pose in the cycle.



This is the frame where the character impacts the ground. It is also the lowest point in the cycle. The characters arms are furthest from the body as a result of the force of hitting the ground. The front foot is fully in contact with the ground; the rear foot has just lifted up from it.

Note that the leading foot is directly beneath the body, supporting the weight above it. Too many beginners produce recoil poses where the foot is not beneath the body, but several inches ahead of it. Try to avoid this.

To keep things simple, let's skip the passing pose...it's closer to being an inbetween. Let's look at the high point.





This is the highest point in the cycle. The character's body is stretched to the maximum as he lifts his leading leg forward to reach the next contact position. The heel of the trailing foot is just beginning to leave the ground.

Those are the three most important poses to remember when creating a walk animation. If you can wrap your head around them, you will have a much better chance of completing a satisfactory walk cycle.

There are two basic ways to animate a walk cycle. You can animate the cycle "in place" or across the screen. Here is the same scene shown in each style.

Across screen



In place

Why animate in place? There is one main advantage:

You only have to draw a single stepping cycle, then you can reposition it across the screen, saving time and paper.

The main disadvantages of animating in place:

- 1.It can be confusing.
- 2.The "arcs" on the character can look weird when the character is moved across the screen.
- 3.It can be difficult to match the character properly to the background, if he has to register to something on it.

I am going to show you how to animate a character walking across the page. Once you feel comfortable with that, an in-place walk cycle should be slightly less intimidating.

Let's begin.

Look at this image:





This shows the keyframes of a walk cycle moving across the screen. The most important pose is the contact pose, i.e. #1, #7 and #13. Use this image as an overall guide to your scene.

1.Guideline.

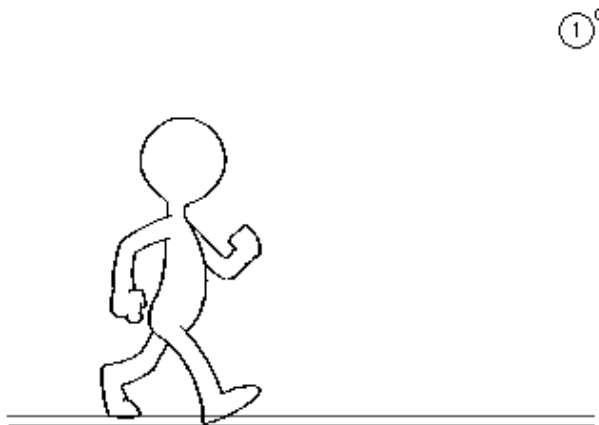
On a clean sheet of paper, draw two parallel horizontal lines moving across the bottom of the page.



These are the lines that the feet will follow as they walk across the page. Without these lines to guide you, your character can drift either too high or too low on the page.

2.Draw the first contact pose.

Put a clean sheet of paper down over the guideline drawing. You are going to draw the first contact drawing.



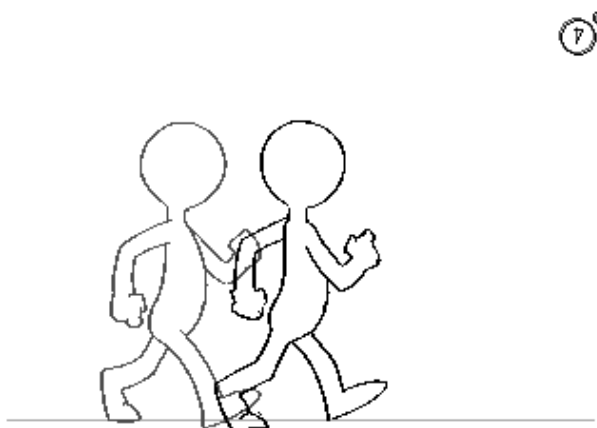
Position the heel of the right foot on the lower line; position the toes of the left foot on the upper line. Name this drawing #1, and since it is a contact pose I usually write the letter "c" in the top right of the page, above and away from the frame number. (This is a habit of mine, I don't know if anyone else does it....you will find that it helps to reduce confusion when you have 12 drawings flying all over your drawing board.) Don't forget to circle the drawing number, since it is a key.

3. Draw the second contact pose, drawing 7.

If you have a backlight then switch it on. Put down a clean sheet. Number it #7. Circle the number, as this is a key frame. Write the letter "C" above the frame number, to remind you that it's a contact pose.

Note that the second contact pose occurs about half a second after the first. Here's how

you position the second contact relative to the first: The leading foot on #1 will be the trailing foot on #7. In this case the right foot is about to contact the ground on #1. In frames #1 through #7 it is going to hit the ground and more or less stay there. By frame #7 it will have begun to lift off the ground. Look at the picture below to see how #1 works into #7:

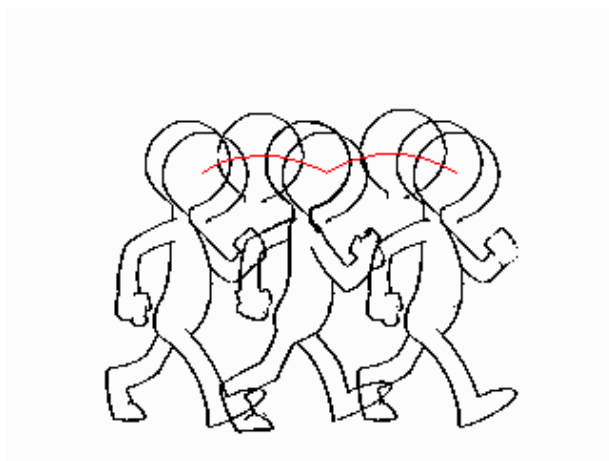


The right foot (the leading one) has touched the ground and the entire body has moved forward. The left foot (the far one) has now swung forward and is now about to contact the ground.

Lightly sketch it in, keeping the overall attitude as similar to #1 as possible. The only differences will be the arms, legs and orientation of the hips, all of which will be reversals of #1.

After you have roughly sketched in the second contact pose, you'll have to check it against the first. Lift #7 off the pegs, and position it over #1. Flip #1 against #7 to see that both drawings have the same volume and attitude. You don't want either to look bigger or smaller than the other. Also, both should be leaning forward into the walk at the same angle. If not, your walk will look more like a limp.

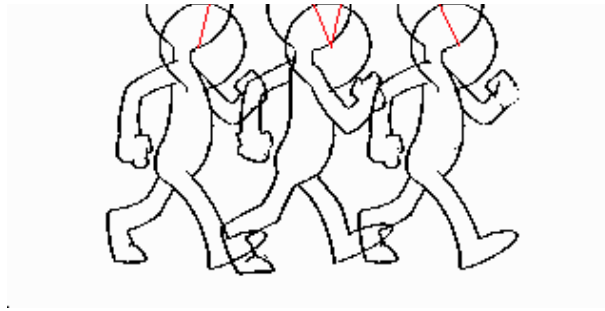
Now that you have drawn these two poses, you can begin to block in the main keys between them. First, an overview of what is going to happen.



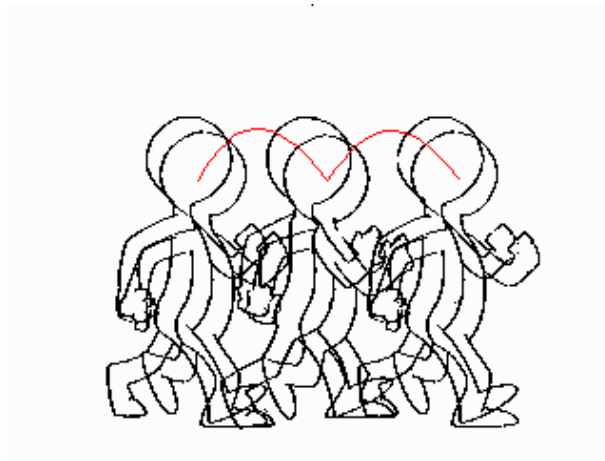
Here are the main keys. The contact, recoil and high point drawings. Remember these positions when you begin to draw them in on their own sheets of paper. If you were to position #2 too high for example, it would make #5 very difficult to draw properly: the overall action would be too "tight"...not enough bounce in the walk.

This would feel like a very stiff cycle, unnatural for a cartoony character. See what I mean below:

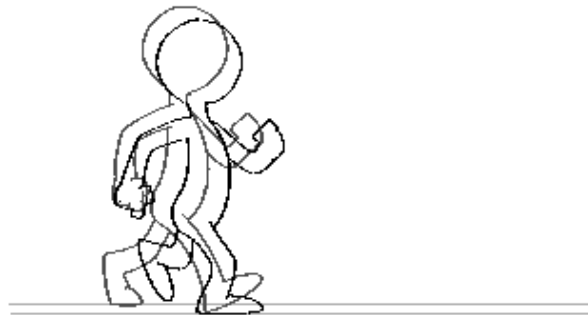




The opposite is also dangerous: moving the recoil too far down can result in a wildly exaggerated action, too unbelievable for all but the weirdest characters:



Just bear in mind that after the first contact, the character works down into the recoil, then up into the high point, then back into the next contact where the pattern is repeated:



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