

ANATOMY: HOW TO DRAW THE LOWER BODY

BY MITCH LEEUWE

YOU'LL LEARN
HOW TO DRAW:

- THE FEET
- THE LEGS
- ANATOMY



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HI THERE!

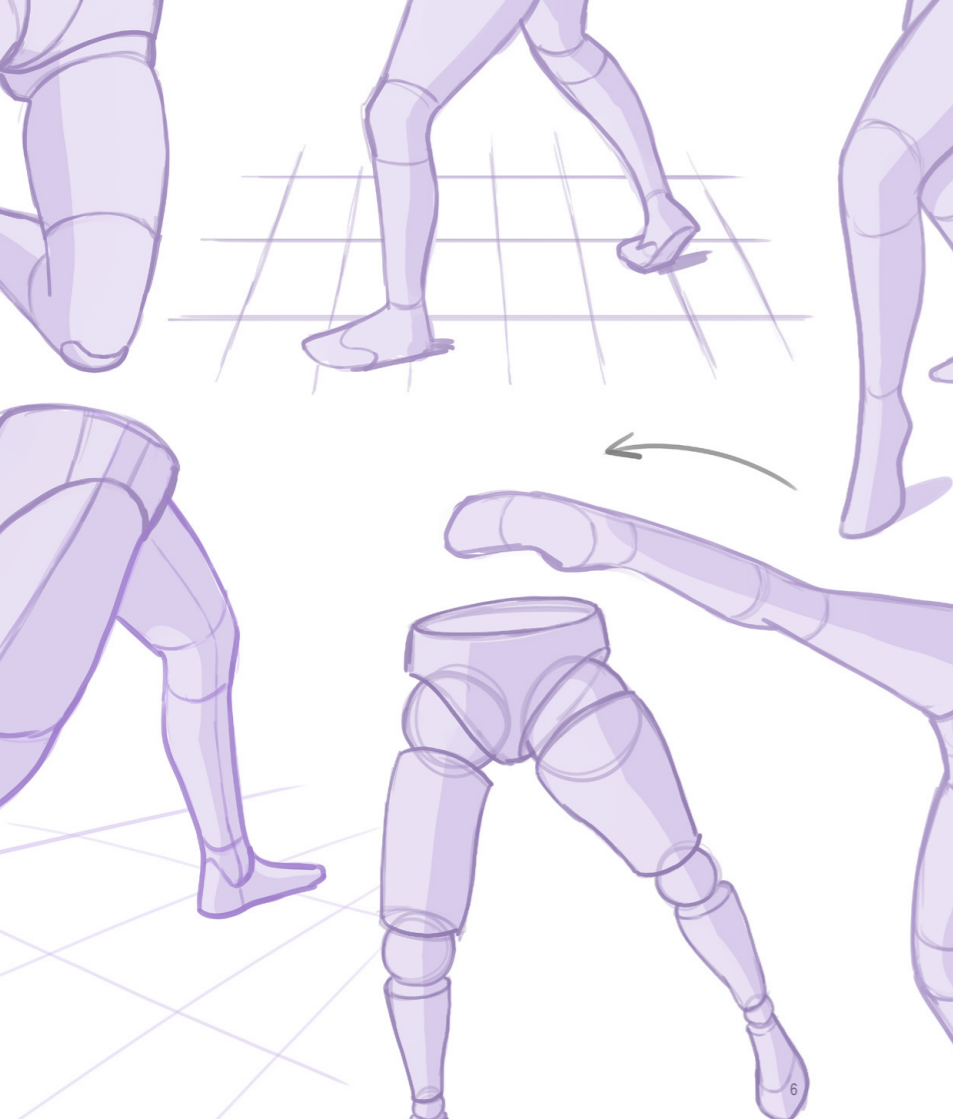


Let me introduce myself. I'm Mitch Leeuwe and am an illustrator from the Netherlands. Thank you for purchasing my book about anatomy. Back in the days when I wanted to learn about anatomy, I found it very overwhelming. So, my goal with this book is to make learning anatomy understandable and accessible for you.

I started out by trying to learn every muscle and bone and I really began to memorize all those different

parts. But after a while I noticed I forgot a lot of their names and in the end, I always had to look it up for reference.

That's when I started to look for tutorials about anatomy for animation. I found examples where the anatomy was simplified and broken down in understandable formulas and shapes. This made it way more fun and easier to learn. So, I started making this book with the idea of putting everything together.



HOW TO USE THIS BOOK

I mostly draw cartoon characters, which are not hyper realistic. And because of that I'm always focused on simple shapes first. But even if you want to draw realistic anatomy, I think this book can be very helpful. Because these simple shapes will form a solid foundation before adding all details and muscles on top.

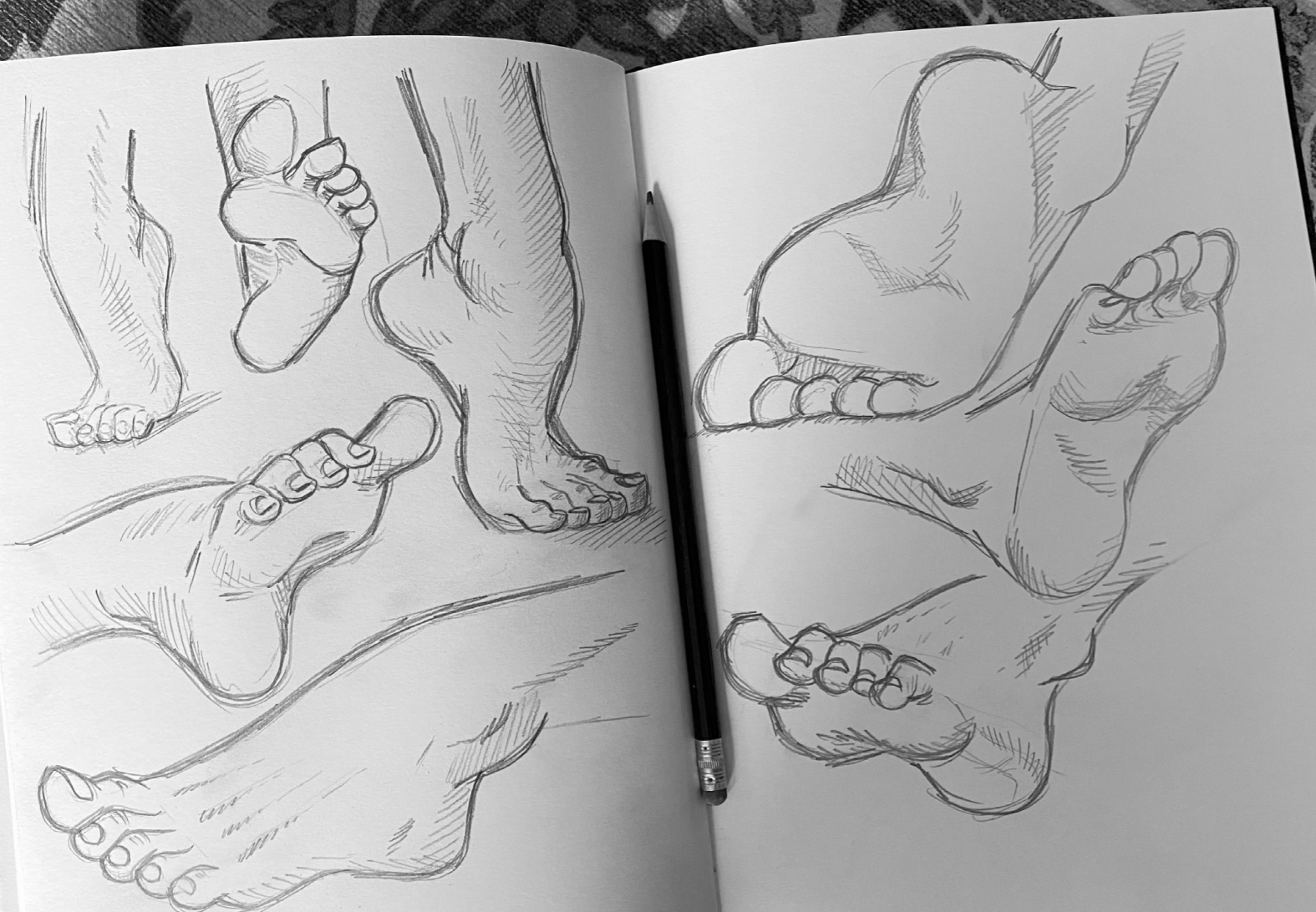
You can use this book to learn from or use it for reference when you are drawing a difficult pose. If you are just starting out, the best way to learn is to take small steps. It's okay to start by copying the drawings in this book and try to examine all different body parts.

Once you get comfortable with copying these drawings, you could start looking for photos of people in which you can see the structure of their muscles. Like a photo from a boxer or a ballerina in a strong pose. Draw the characters first, then add muscles on top, try to see how the muscles work and where they are connected. It takes a lot of time

to learn anatomy, so don't get discouraged if it takes a while to get the hang of it.

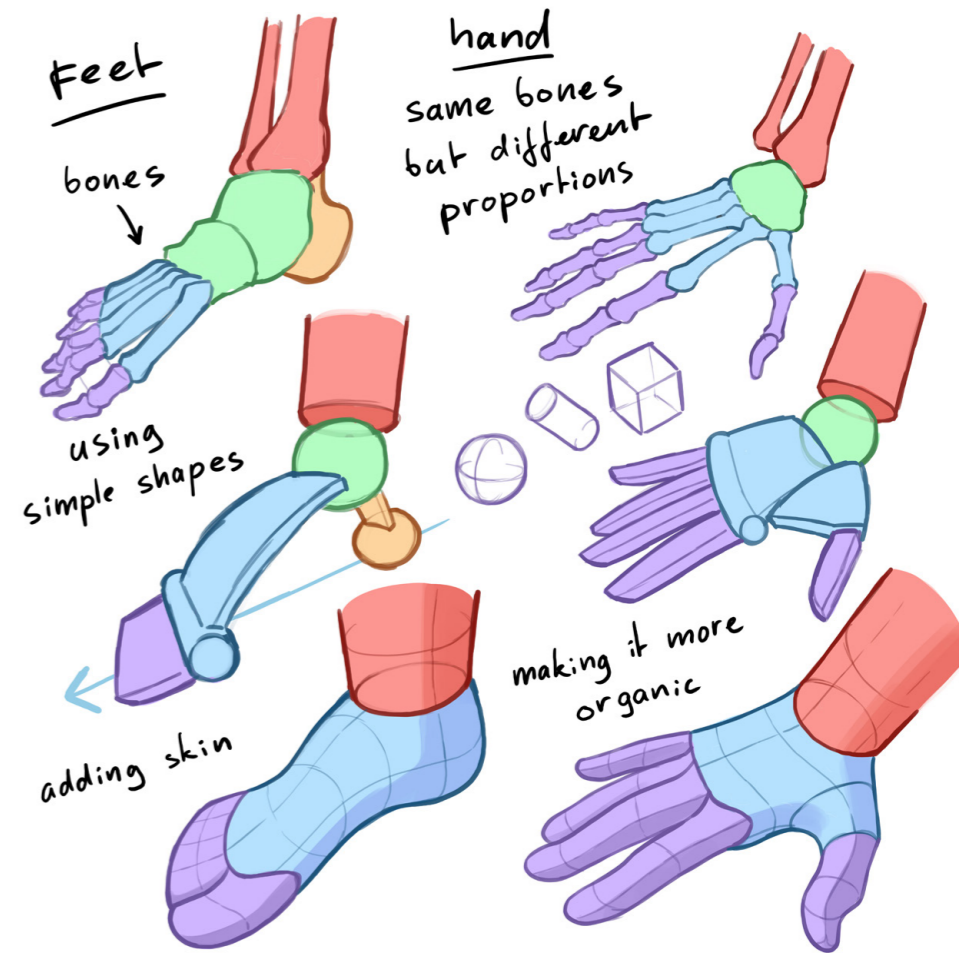
Be patient, try to have fun and enjoy the process. Start by doing thirty minutes every day, instead of doing a couple of hours in one go and get frustrated with it. Doing a bit every day will make a big difference after some period of time. When you have difficulty drawing shapes, start practicing drawing cubes, spheres and cylinders. When you can comfortably draw shapes on paper in 3D, you can basically draw anything. By mixing up those shapes you can build any object you want.

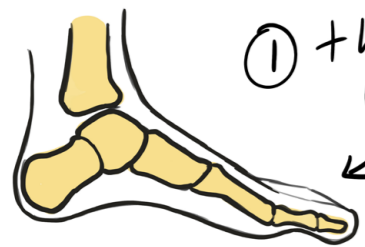
THE LOWER BODY



THE FOOT

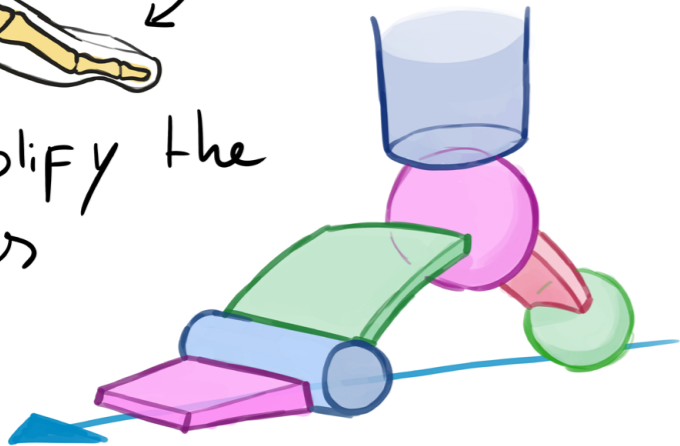
Feet are actually very similar to hands from an anatomy perspective. The above illustration demonstrates this. It also shows how to use basic shapes to draw complex objects. Having a good understanding of the bones can help you understand how the body is built and how it moves. You can think of it as a complex stick figure that we used to draw as kids.





① there are a lot of bones in the feet

② simplify the bones



③ simplify the feet in 3 shapes

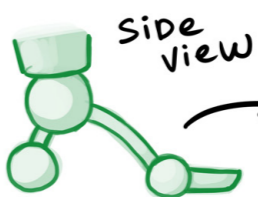


This is how I approach drawing feet. I start with very basic shapes which are simplified versions of the bones. Then, I add the skin on top of what I've drawn, giving it a sock-like appearance.

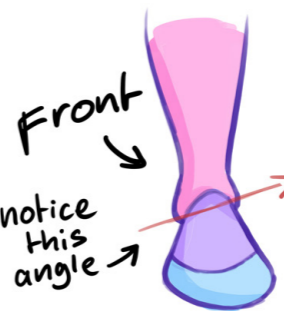
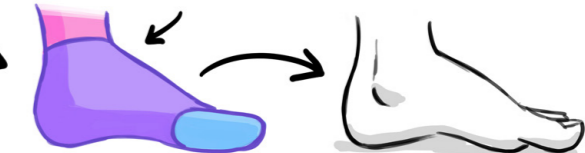
using these shapes to build the feet



these shapes help draw the feet in difficult angles



like a sock

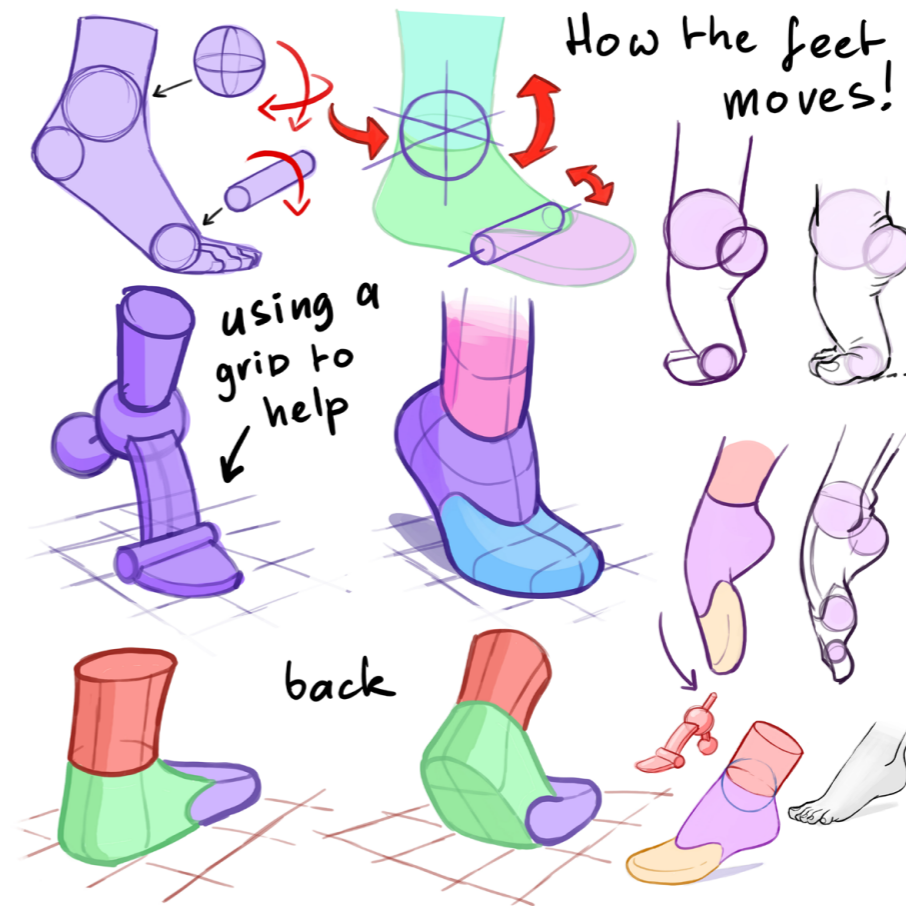
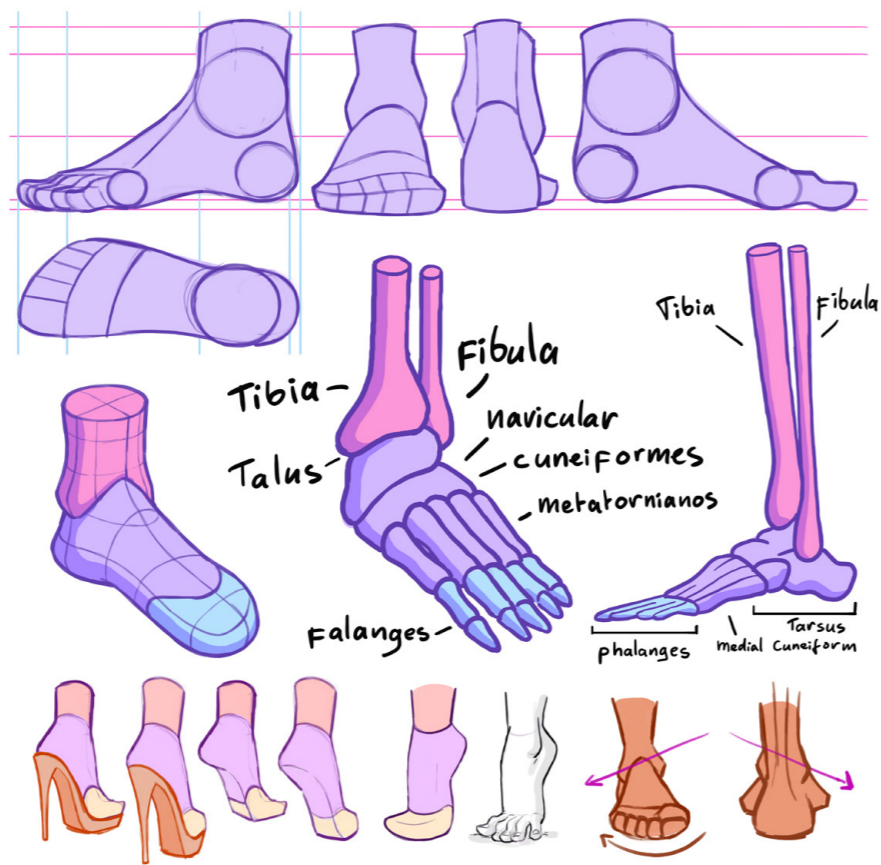


Back



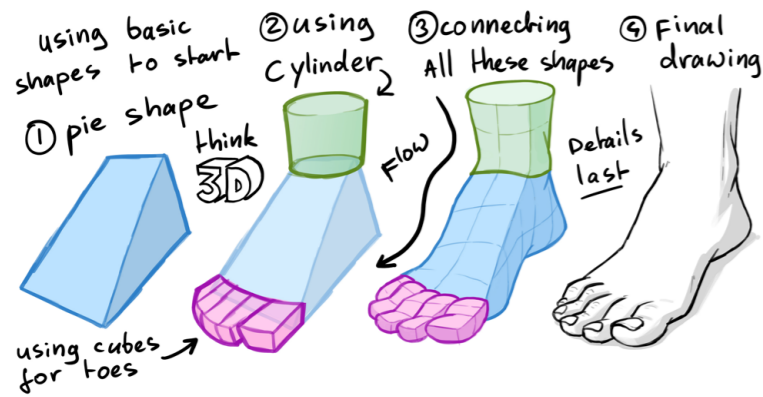
Here are more examples of how I draw feet. You should try to use pictures for reference or even better, draw from life. You can go to a figure drawing class and focus on the feet. Focus on the steps I've illustrated. Specifically notice the angle in the ankles; the outside ankle is lower than the inside of the ankle.

In the top of the image you can see the 360 degree view of the feet. It shows all of the angles of the feet. Pay close attention to the curves of the feet. A good way to learn and understand the curves of the feet is to watch the movement of feet in real life. If you practice these then one day you'll be able to apply them automatically to your drawings.



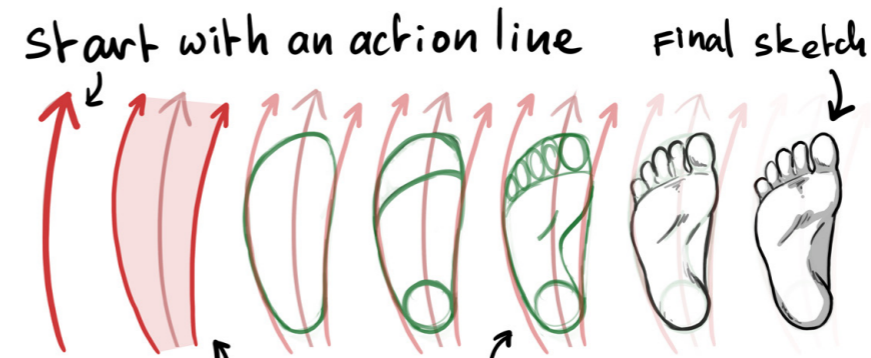
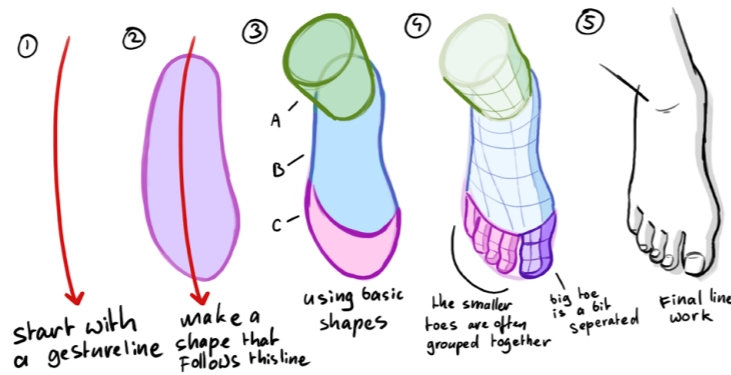
In the top left of this image you can see the ball of the foot. The ball can move in almost all directions: up, down and sideways. The cylinder at the toes can only move up and down. You also see this in hands. There are essentially two different kinds of joints, the ball and the cylinder. The ball has the most mobility and the cylinder can only move up and down. As mentioned previously, it's very useful to observe your own feet and see how the joints work.

In the lower left corner you can also see the foot in perspective. Using very basic shapes really helps to draw it in perspective (at the right scale when drawn with an angle). Try to draw feet in different angles with a perspective grid like this.

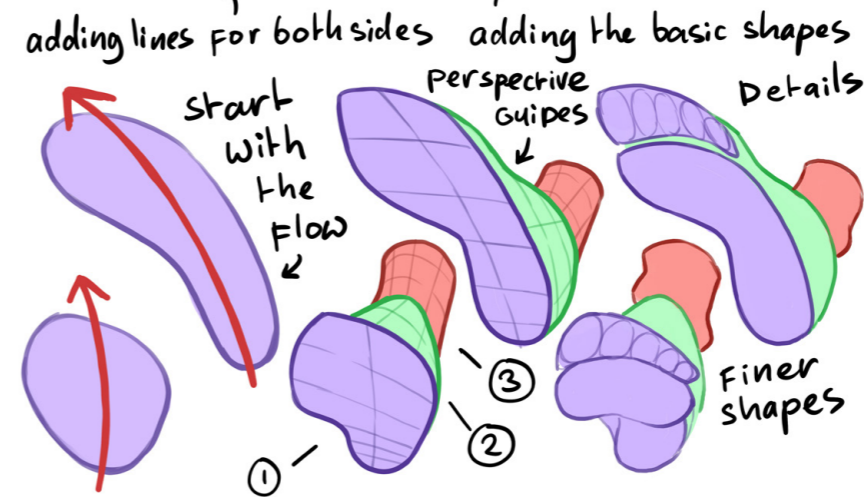


Using this pie (or cheese shape since I'm Dutch) shape can be really useful when drawing the feet in a difficult angle.

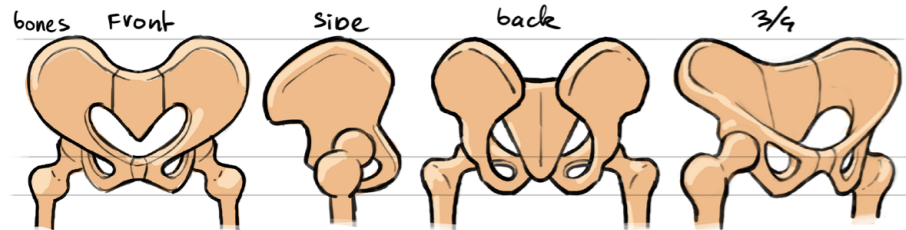
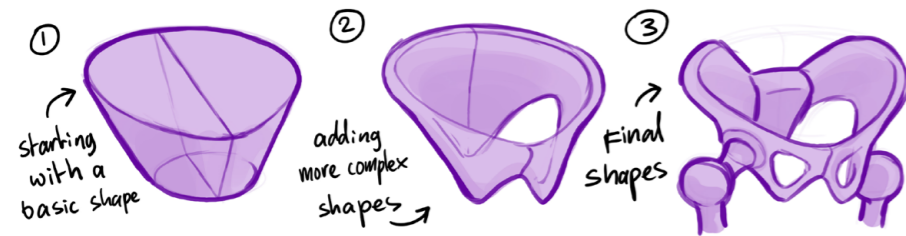
In the top view the most important thing is actually the gesture line (or action line). It's important because without it, the feet wouldn't look human or organic.



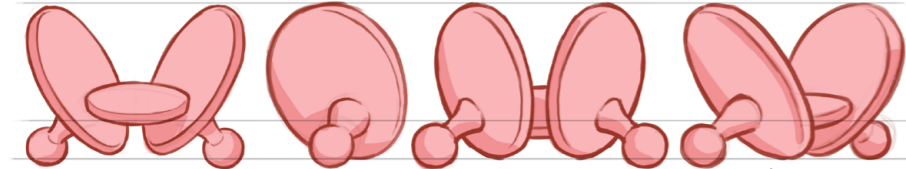
Here is an example of using the action line to draw the bottom of the feet.



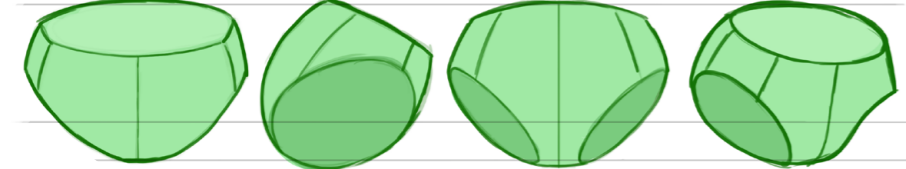
Drawing the feet from a lower angle (from underneath) can be really difficult to draw. Drawing the action line can make drawing this more easy. It really helps to start drawing the bottom of the feet first and build on top of that.



simplified versions of the bones

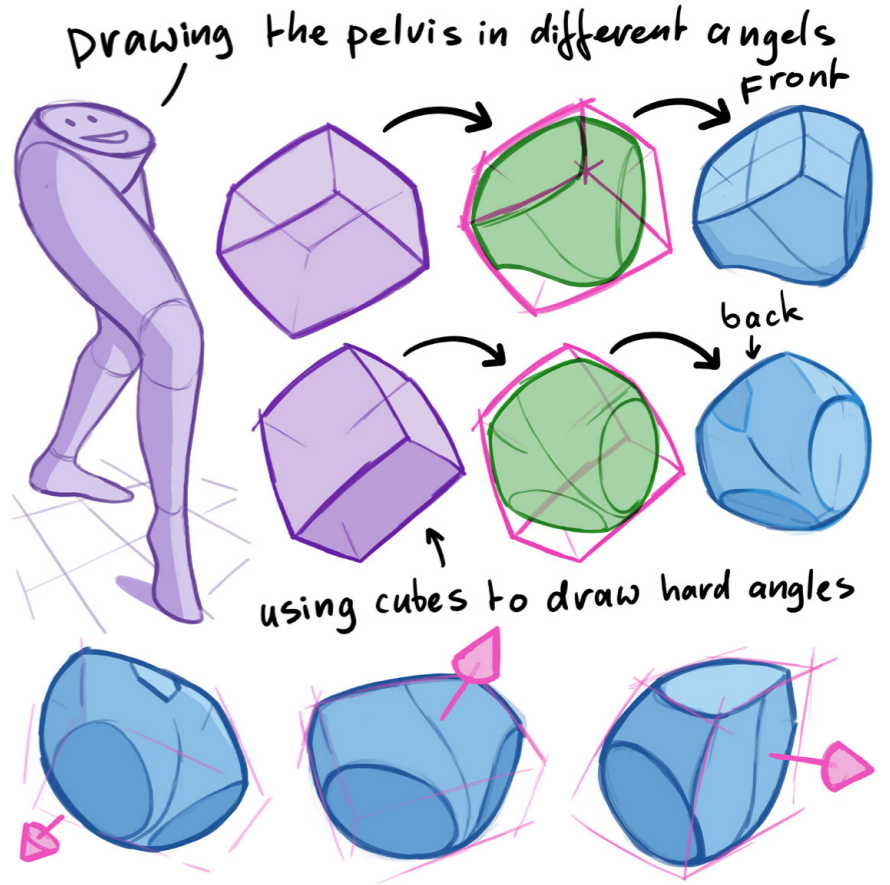


shape i use when drawing a character (its easy to draw & rotate)

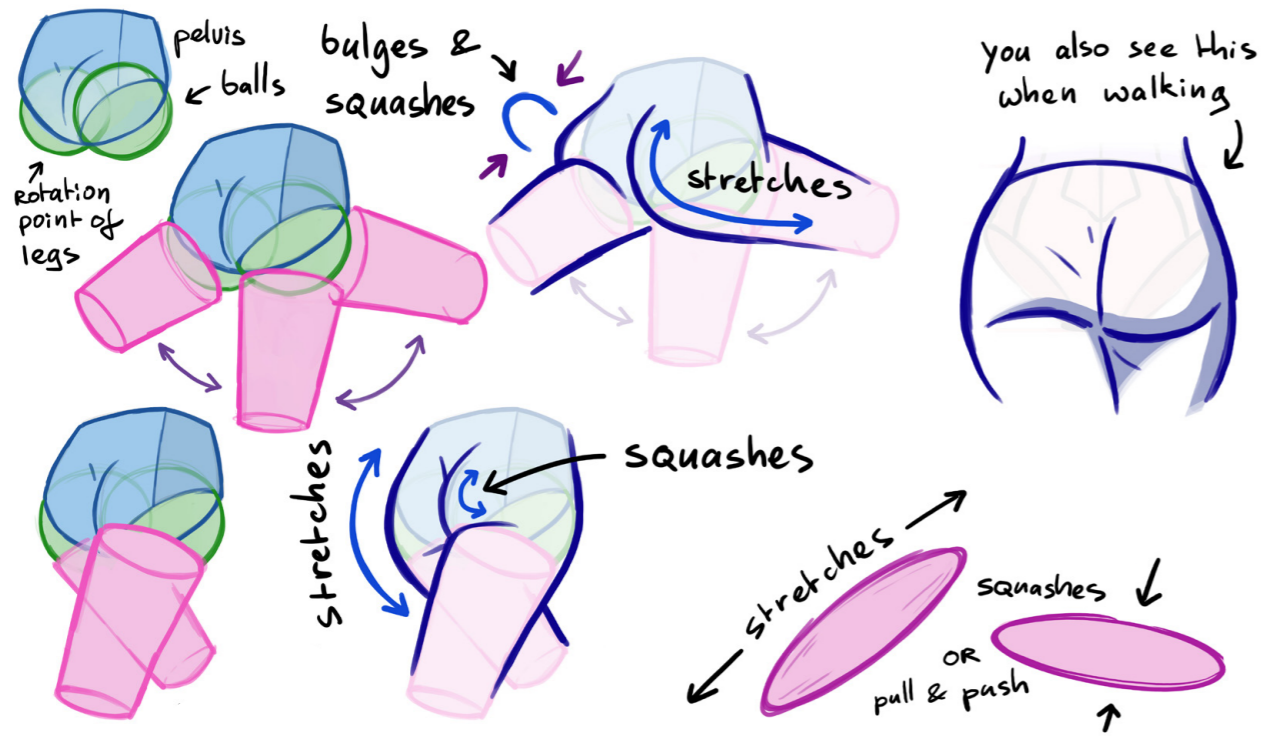


THE PELVIS

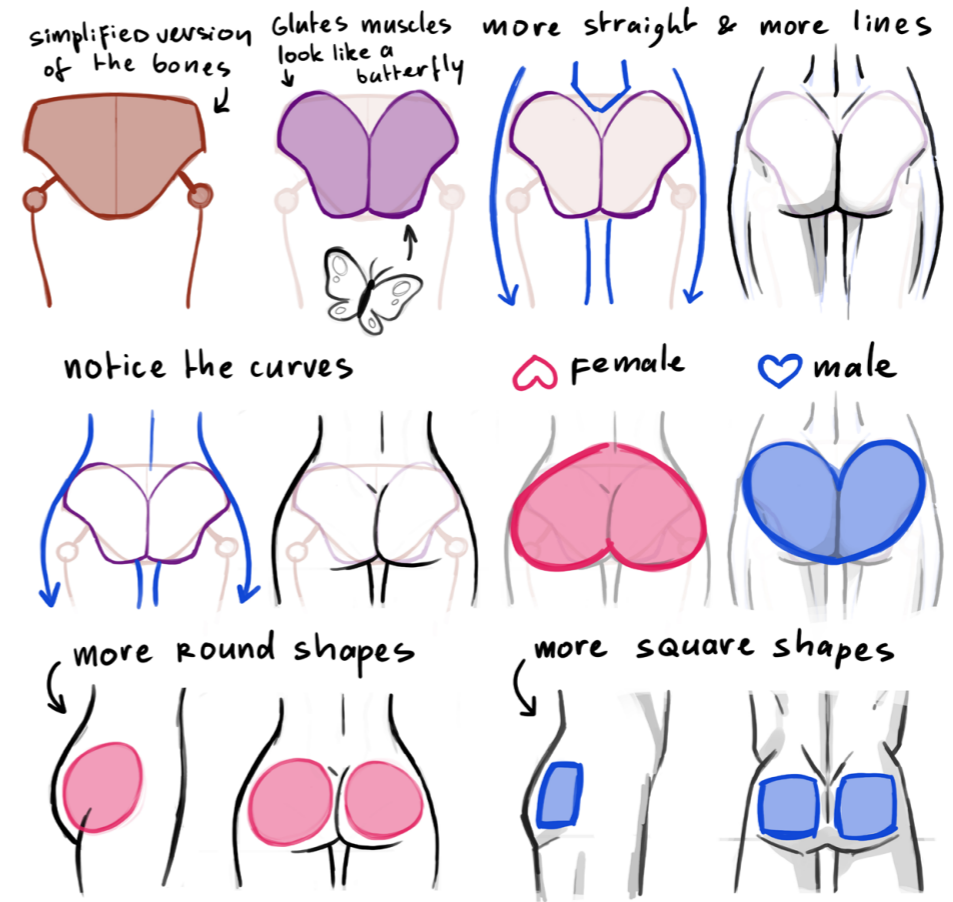
The pelvis is quite a complex bone structure. You can really simplify it as I'm showing in the above illustration. You can see that using these basic shapes makes it easier to draw from a front, side, back and 3/4 view.



Here I took the basic shape and drew it in various angles. You can also see in the illustration that by using a cube, I'm able to draw the shape in difficult angles. You should also try to do this exercise.



Next, I want to show how the pelvis is connected to the legs via the glutes. The glutes (gluteus maximus) refers to the butt. Notice how it moves when a person walks and does other movements. The glutes squash and stretch.

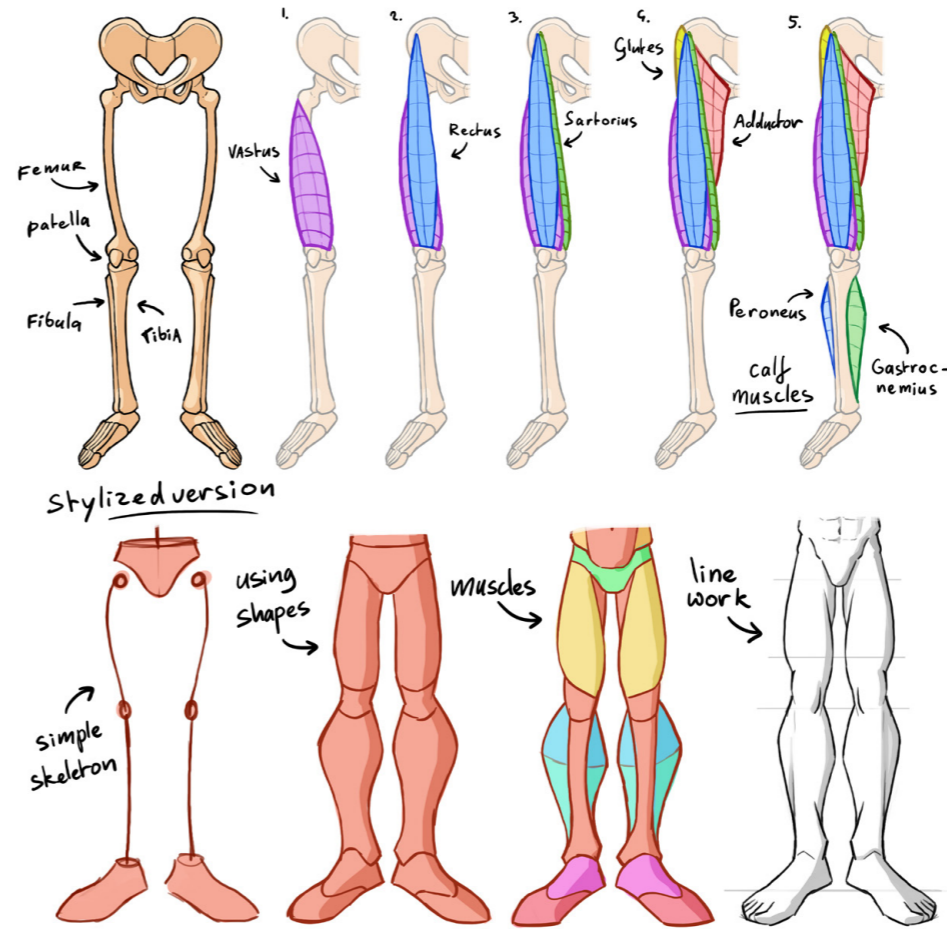
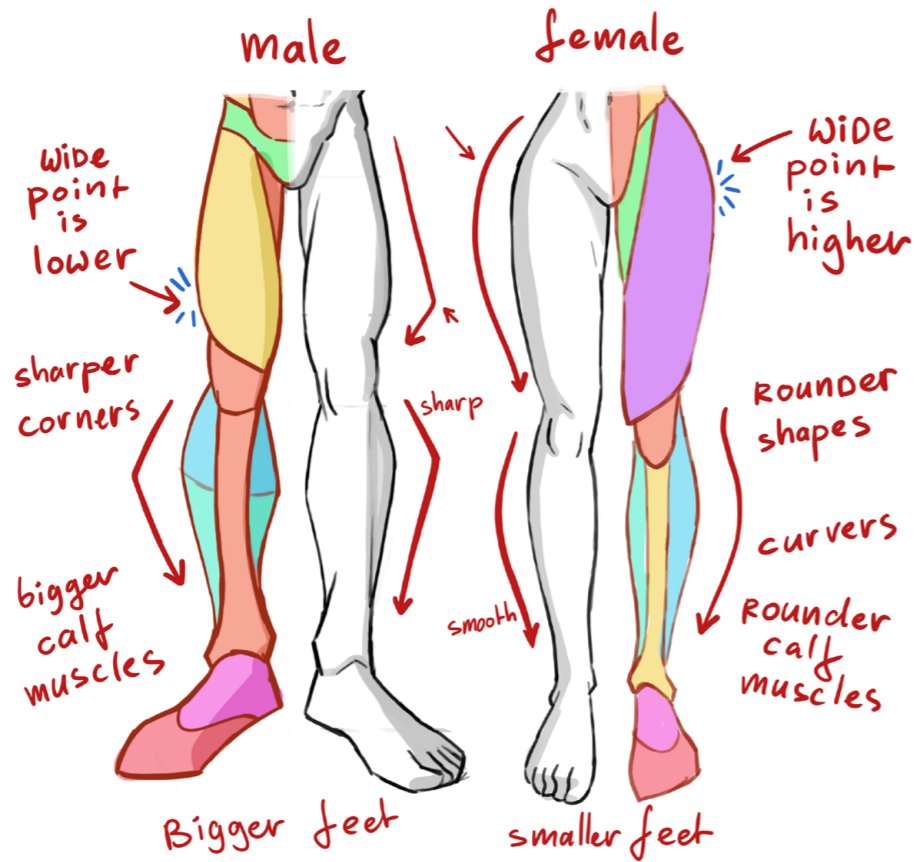


In this image I wanted to show the general difference between the female and male back side. With the male, the backside is more square-based and with the female it's more round.

Of course this is a generalization as there is diversity among people. You should consider what best fits with your character.

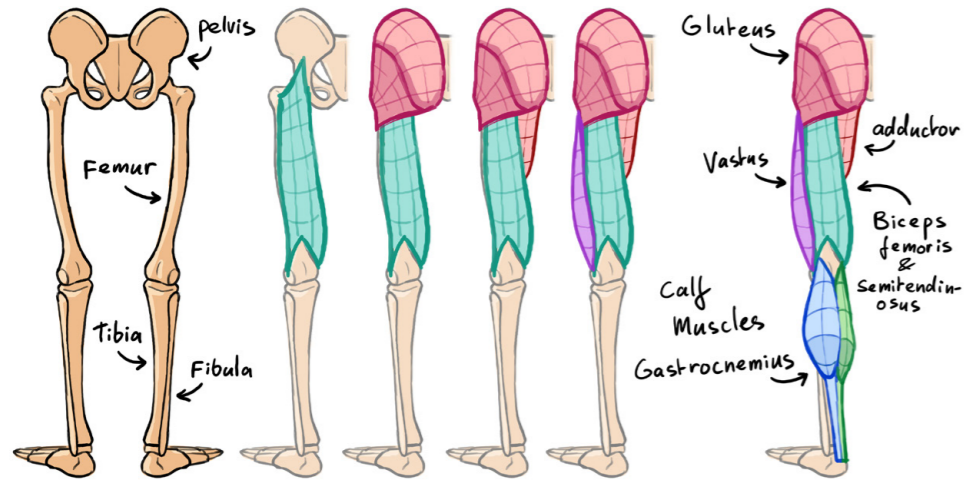
THE LEGS

Here you can see the difference between male and female legs. With females the pelvis/waist is, generally speaking, the widest point of the legs. With males, typically, the widest part of the leg is the lower part of the upper leg. In the image above I used a drawing of a stylized male character with exaggerated calf muscles. I recommend that you also try this exercise: focus on experimenting with these proportions.

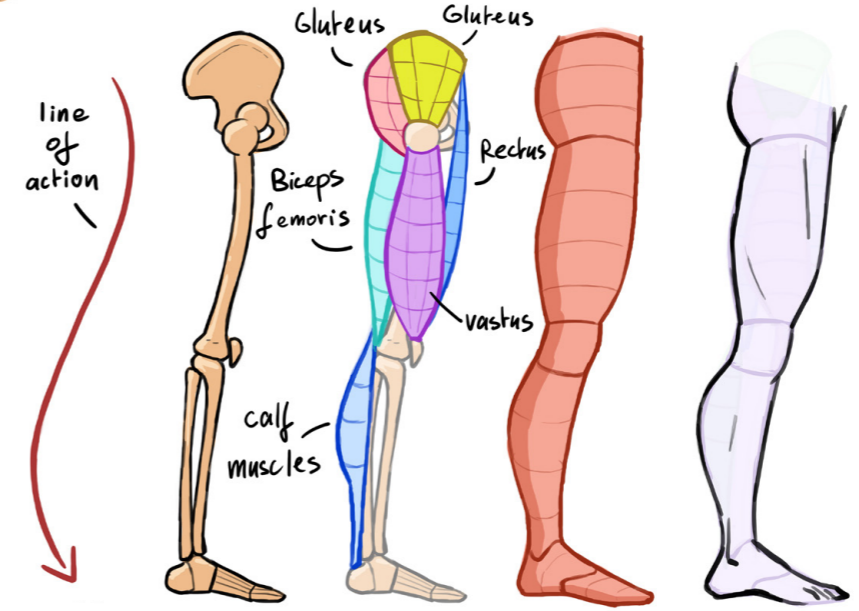
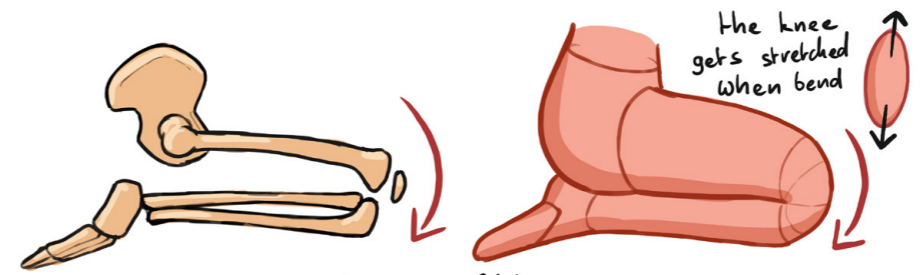
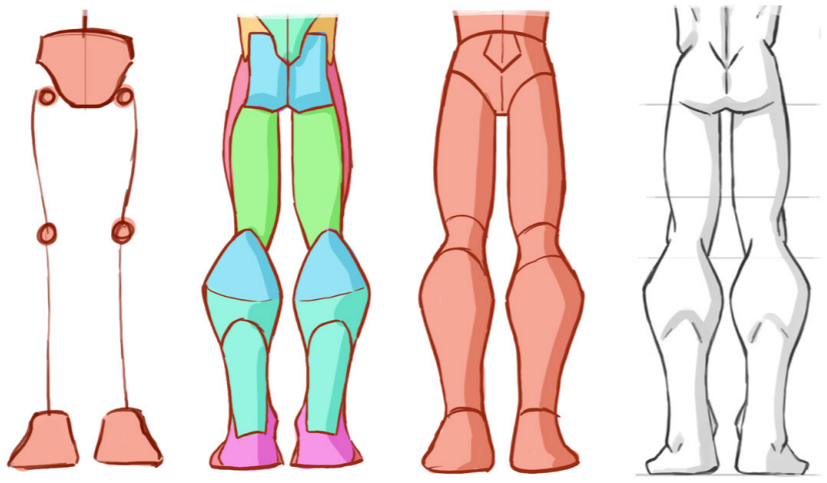


This illustration shows step by step how I add the muscles to the leg bones.

The legs have a lot of muscles but you could simplify it using this stylized version. The typical person does not have clearly defined muscles visible when looking at their legs. When you look at a very muscular person, however, you may be able to see the various leg muscles more clearly.

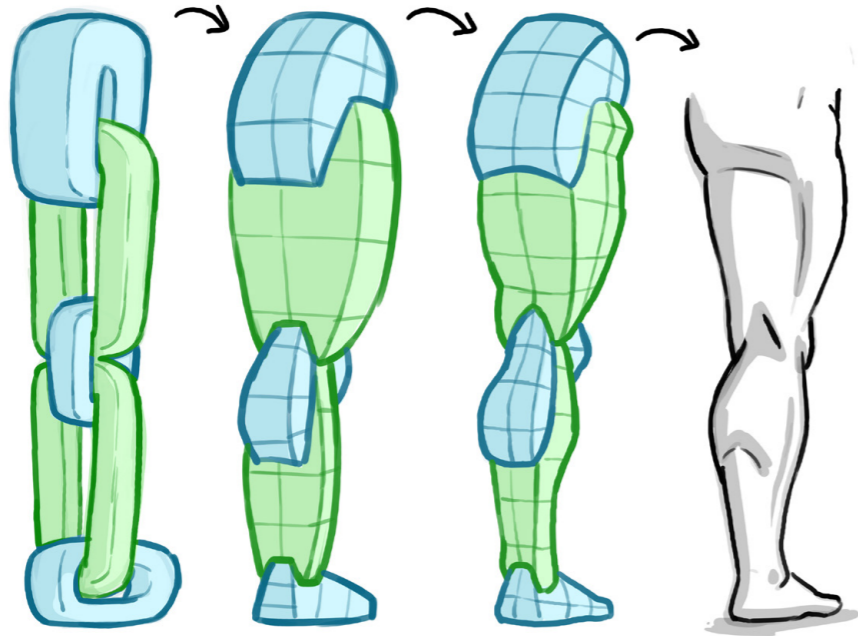


This is how you can draw the back of the legs. I recommend trying this exercise: draw these legs but in different proportions and see how that looks.

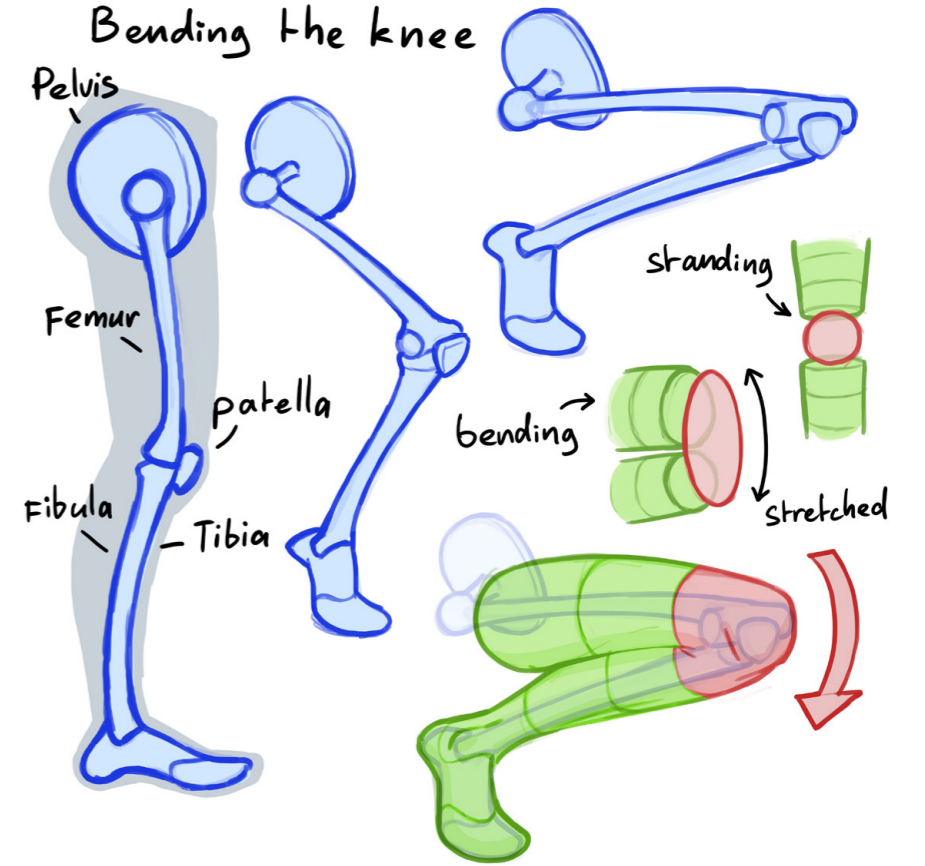


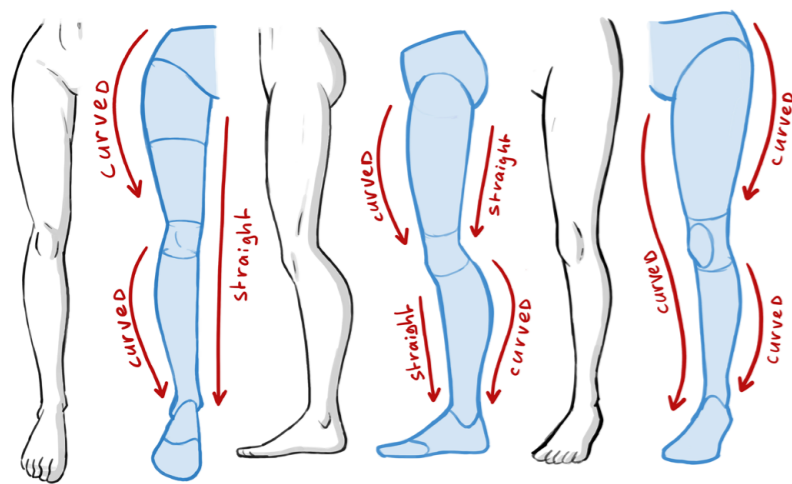
Here you can see how to draw the side of the legs. In the side view you can clearly see an S line through the leg. You can see that the muscles and the bones together create the shape.

A funny way of looking at the muscles is to look at it as a chain. It may sound strange, but the leg is actually very similar to a chain shape when you consider how the leg moves and bends.



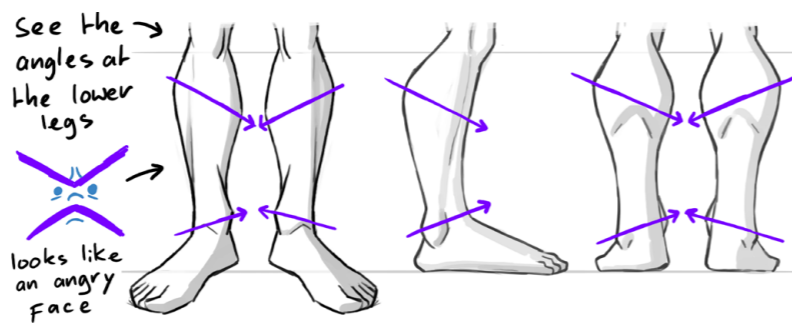
When we kneel down we bend our knee. With that bending our knee stretches as in the example I show using the stretching ball here.



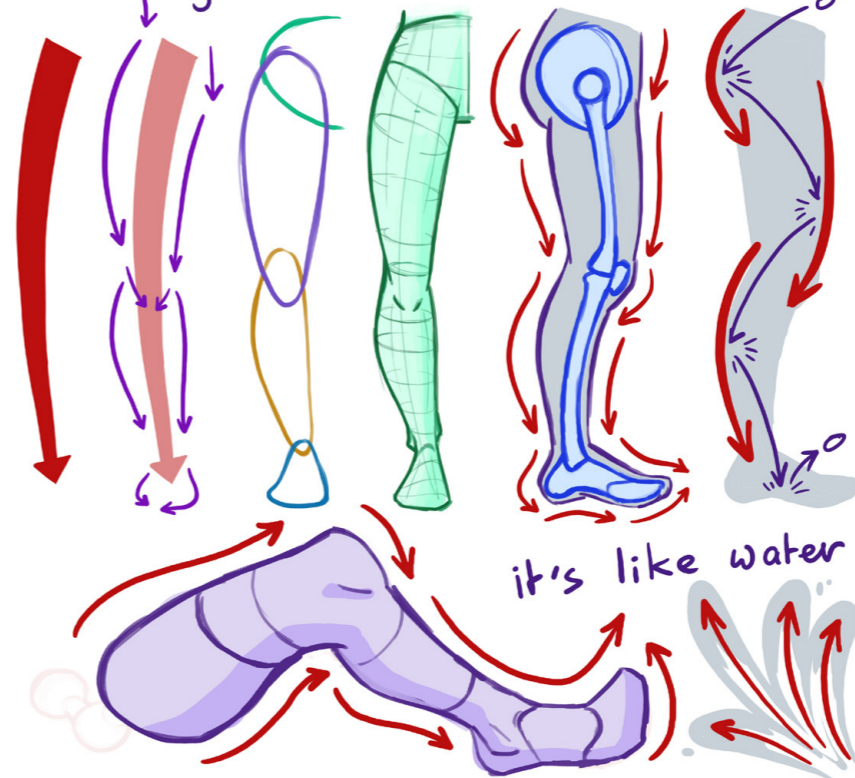


Here I'm showing the curvy versus the straight elements in the legs. When I'm drawing I try to avoid parallel lines and instead create lines that have contrast. So when I'm using a curved line, then I'll draw a straight line on the opposite side. When you use parallel lines things don't look organic and generally speaking, we want to make the body look organic.

When you look at the calves and the ankles you can see this angry face in it (see above illustration). Seeing this angry face will help you to remember the angles in the lower legs. The widest point from the outside of the calf is higher than the inner side of the calf muscle. For the ankles, it's the opposite.



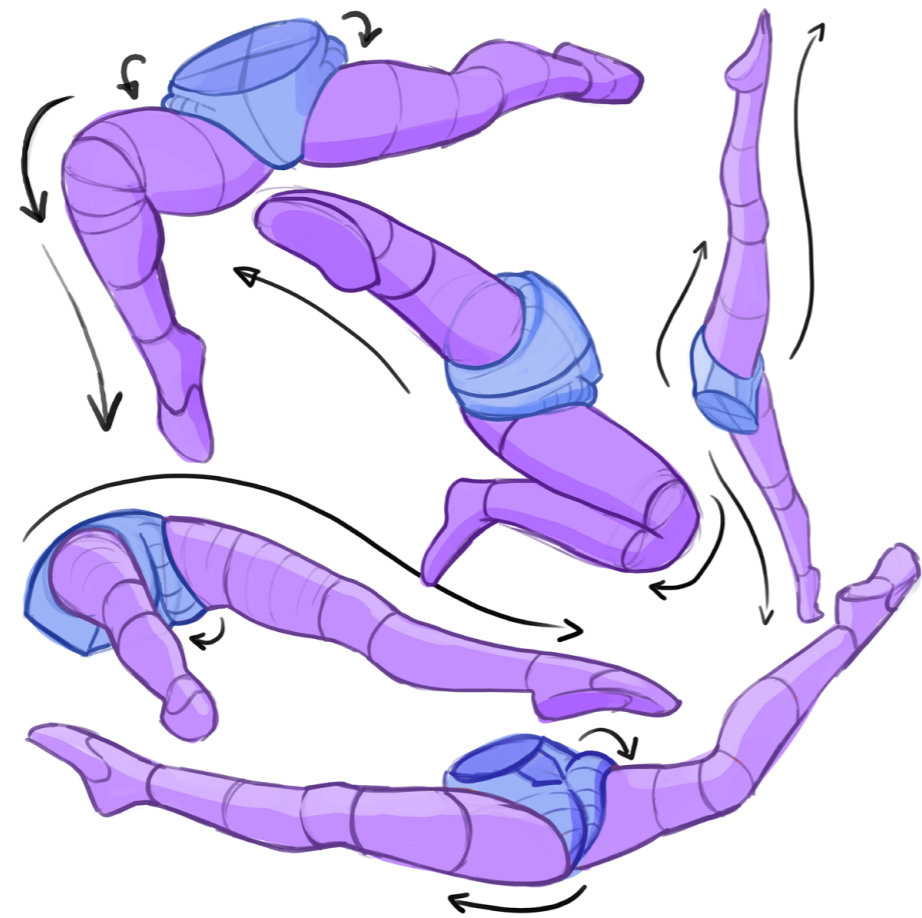
Always try to get flow. Think of a ball bouncing & gesture within the shape



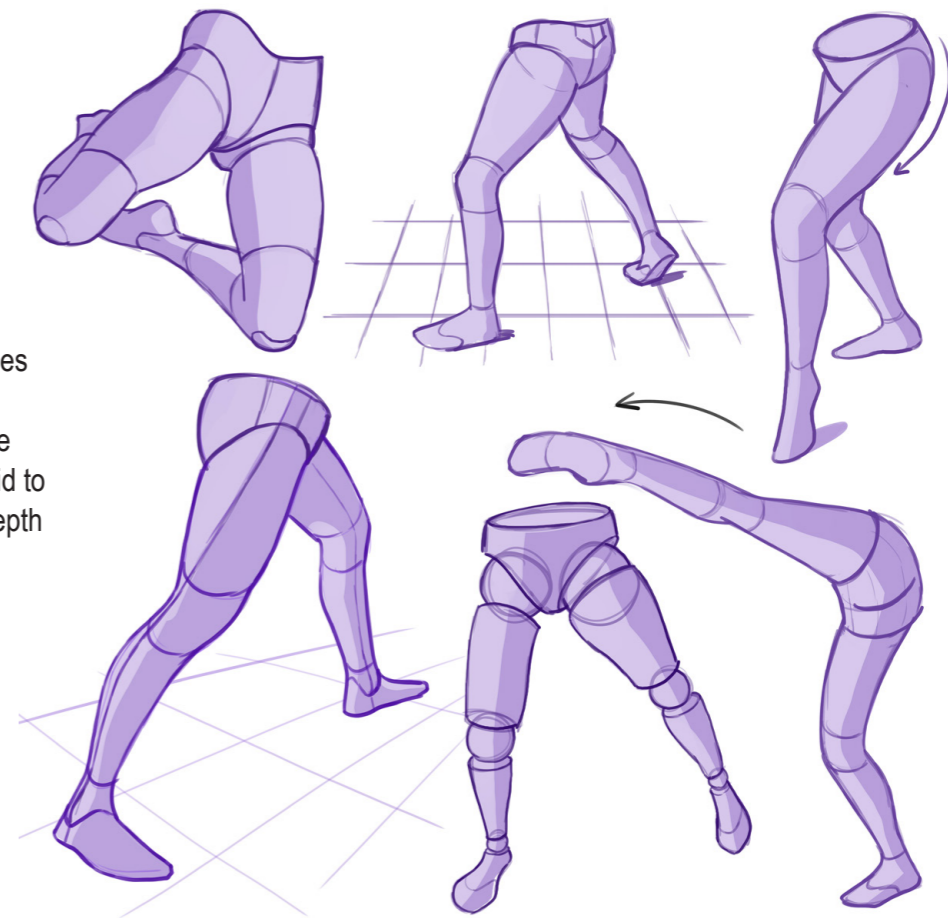
Here I'm showing how I use the action line to create gesture (feeling that the object is in motion) in the leg. You can also see that I've drawn the arrow on the top thicker than on the bottom. I've drawn it this way because the leg becomes narrower as you move towards the feet. I've added additional arrows to highlight that there is a flow to the leg.

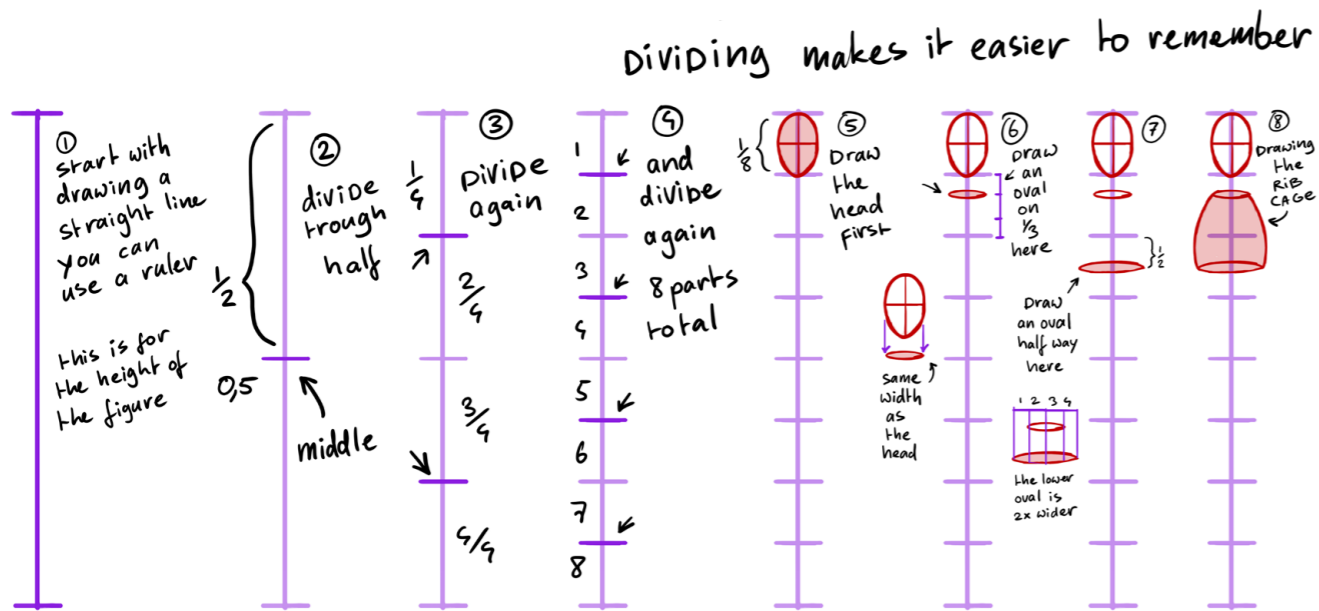
You could think of it as water flowing. You could also imagine that you dropped a ball inside the illustration and that the ball would bounce between both sides.

Here we examine how the legs move while keeping the flow of motion. You can see the action in the illustration. Notice how the glutes squash and stretch as I've showed before. In this image you can also see how the overall shape follows. All the shapes are combined as a whole.



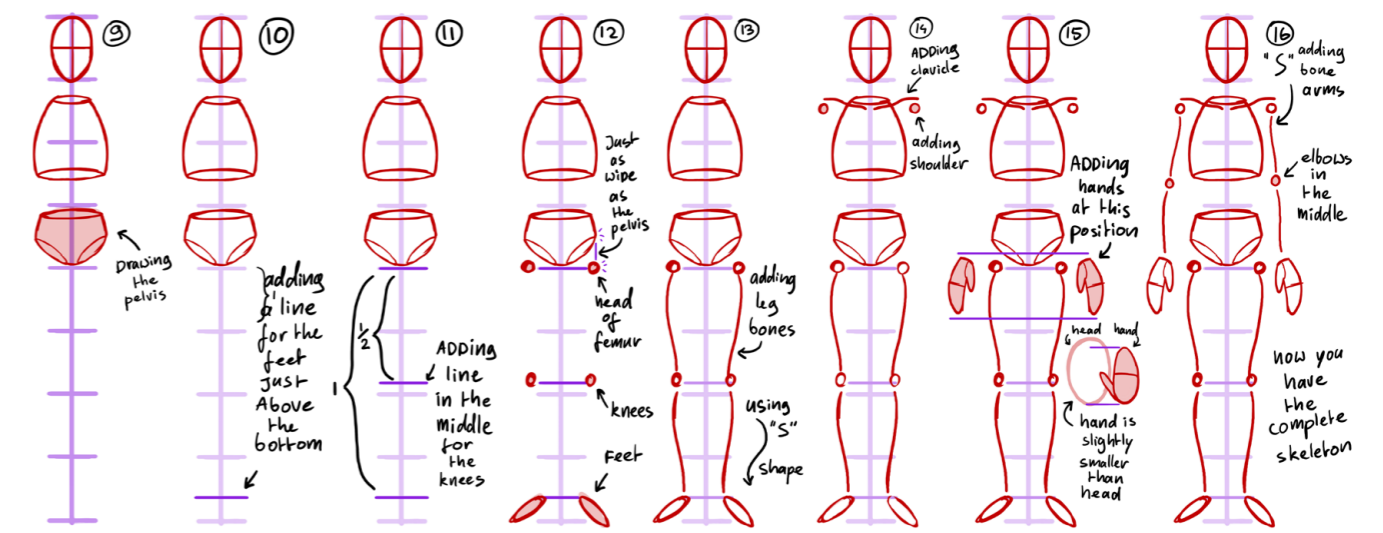
Here I've shown more examples of the pelvis, legs, and feet combined together. Also notice how I used the perspective grid to draw the legs, adding more depth to your drawing.





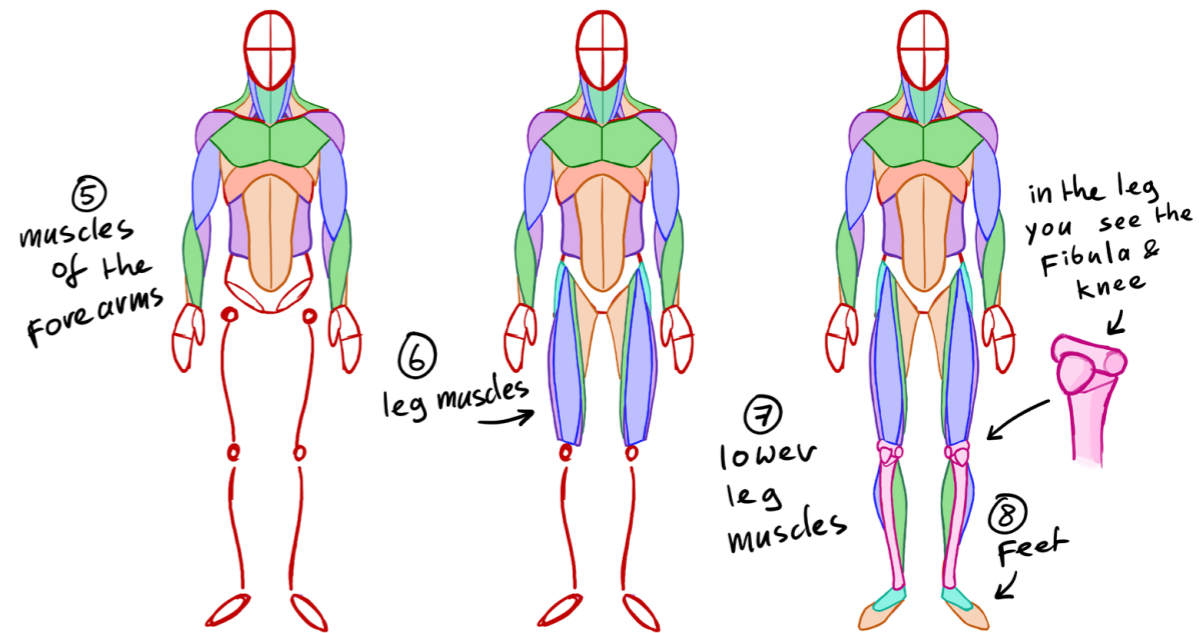
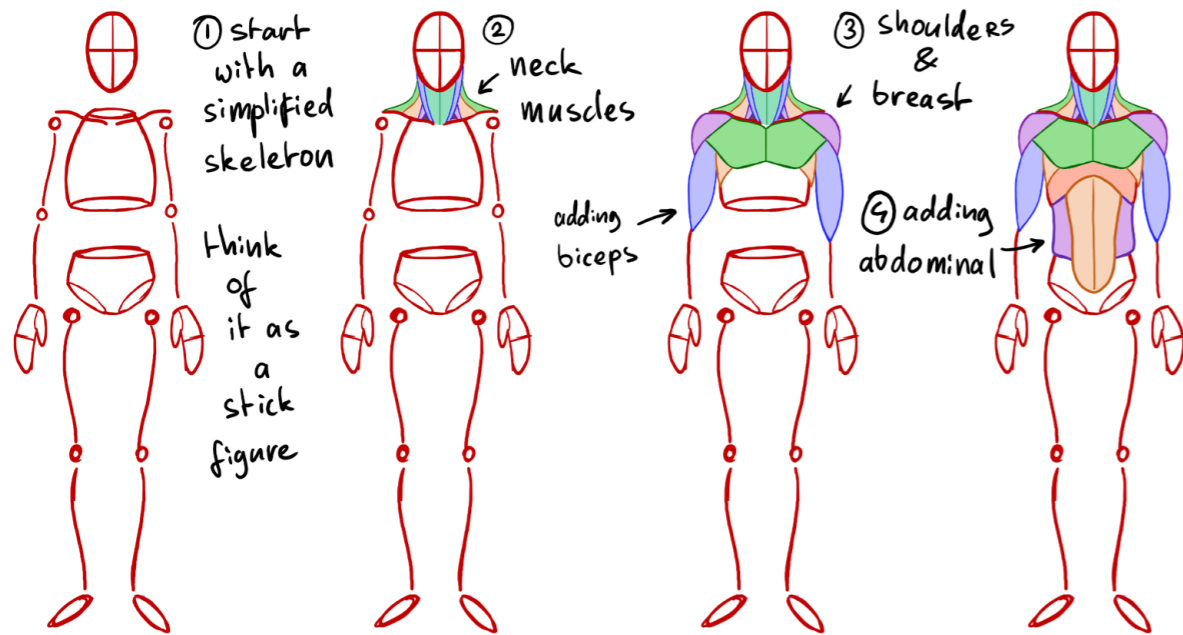
THE HUMAN FIGURE

this way you get all the properties of the body



In this image I'm showing how to draw the proportions of the human figure. This is just a guide and often I use different proportions because I mostly use a stylized style and try to avoid realistic drawing (personally, realistic

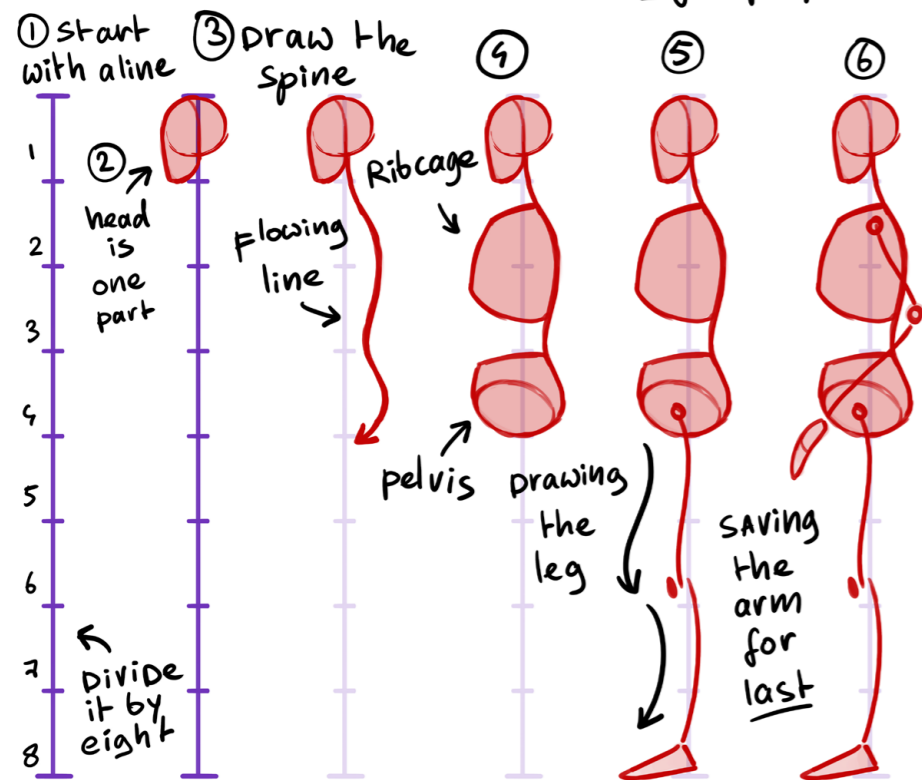
drawing is not my style). Regardless of which style you are drawing in, it's still useful to understand the fundamentals and understand the realistic basis for our illustrations.



This illustration shows the steps of how I add the muscles to the entire body. I have covered all of the muscles in earlier chapters but I haven't showed all of the steps together and sequentially until this point.

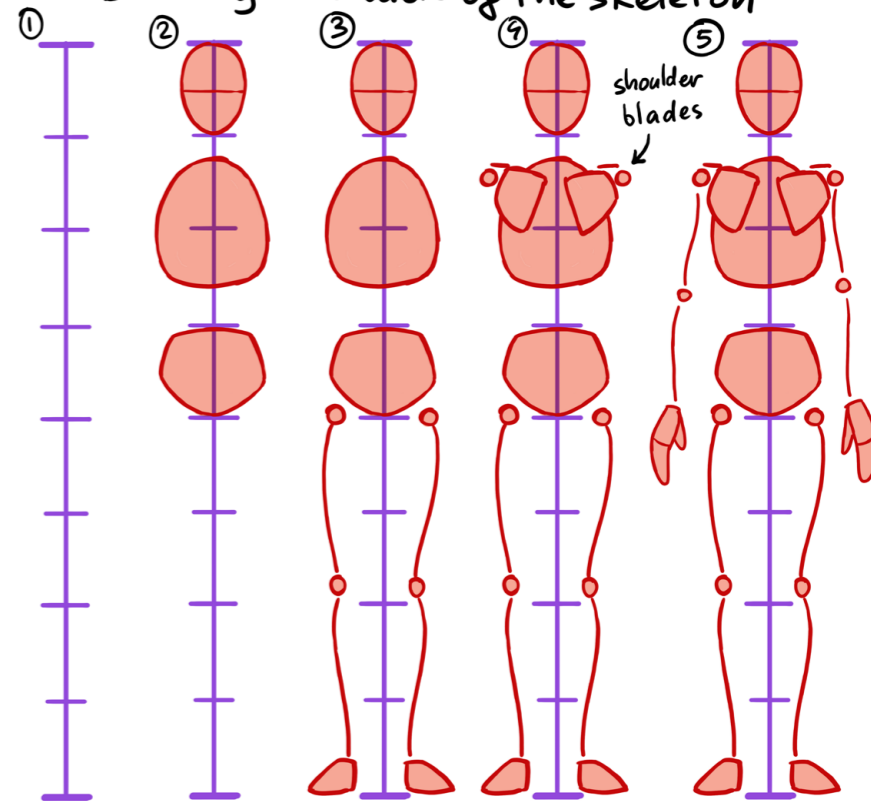
Using these steps makes it easier for me to remember how to draw the muscles. Typically I draw using different proportions, but learning the anatomy in this way has helped me to remember all of the muscles of the body. Of course this is a simplified anatomic drawing, but it's quick and "easy" to draw.

the side view of the skeleton, using for proportions



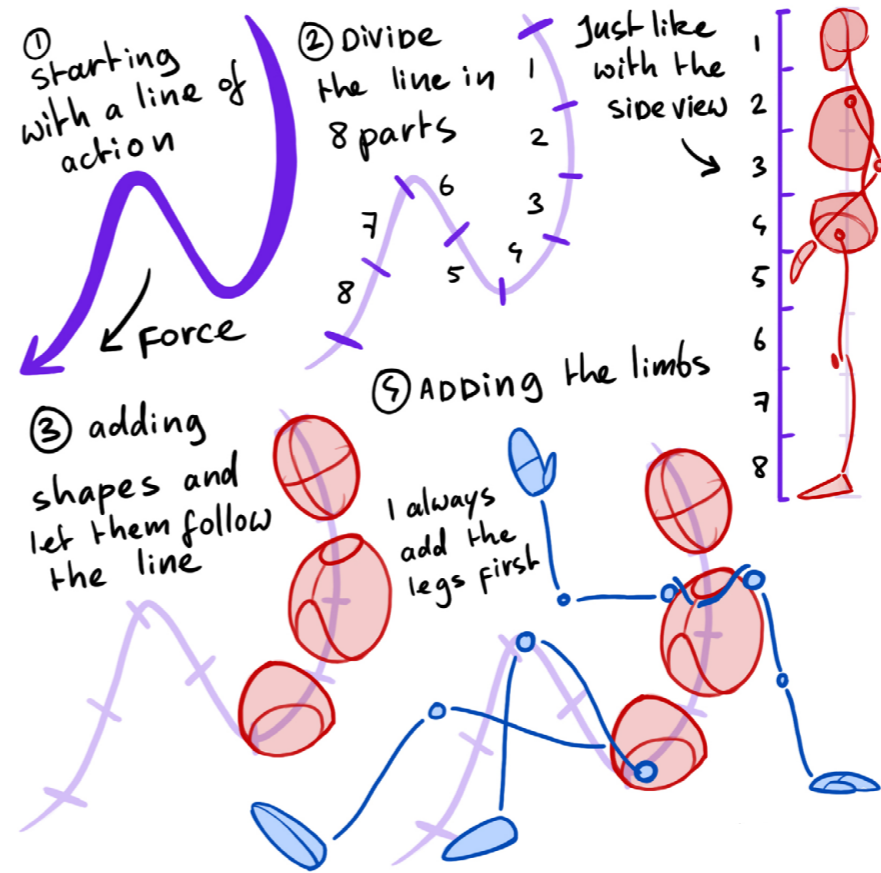
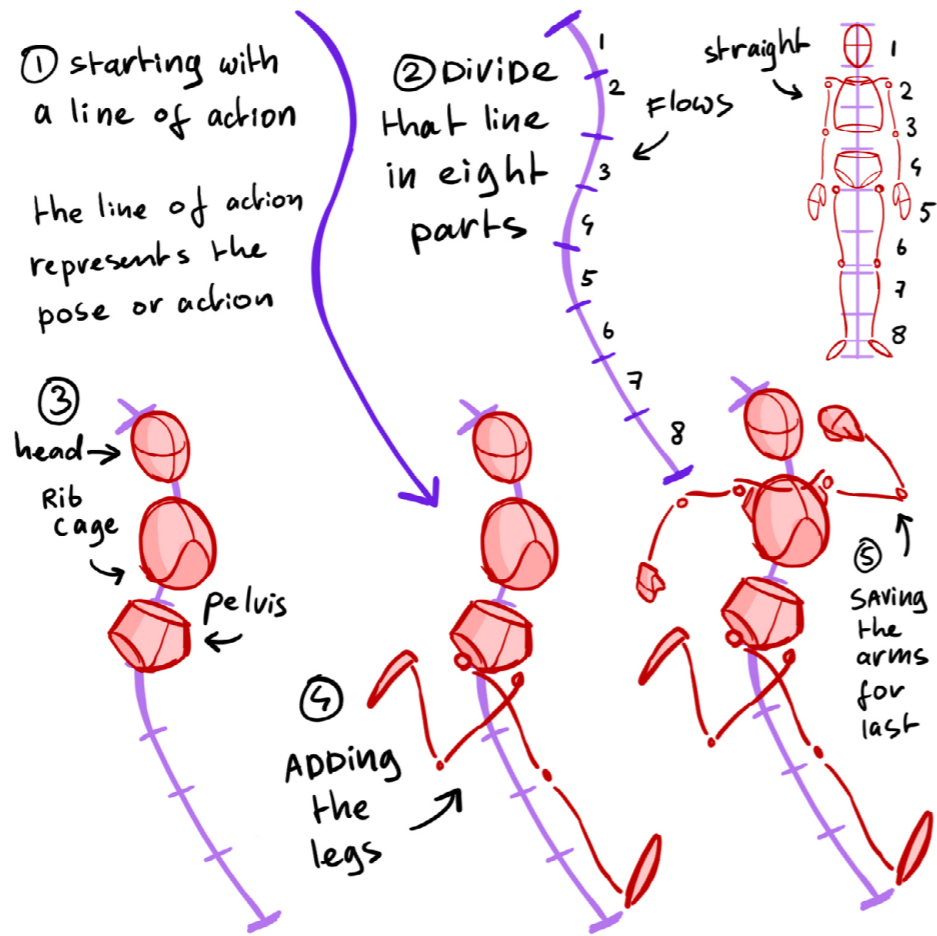
This illustration demonstrates drawing the skeleton from the side. With the side view you see this nice flowing line through the spine and the legs.

Drawing the back of the skeleton



Naturally, the back looks a bit like the front view. The biggest difference is the placement of the shoulder blades on the back view.

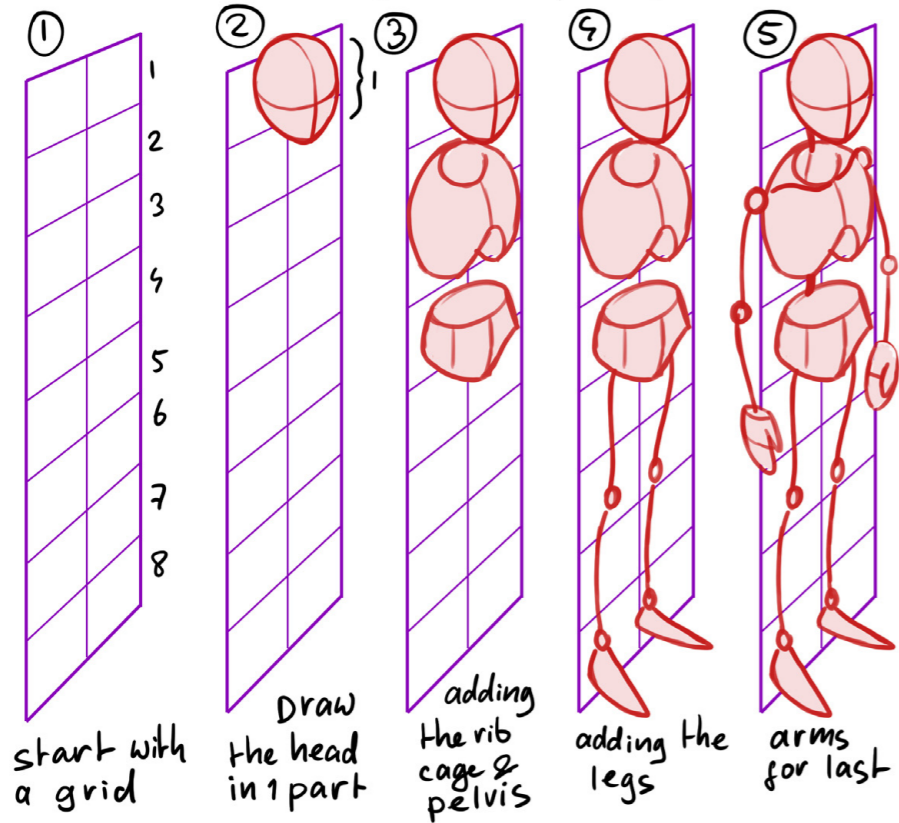
Here you can see how I use proportions in a pose. This is essentially the same method used as when I'm drawing a straight pose. I start with drawing the action line and divide that line into eight parts. Each of those lines creates a landmark of the body.



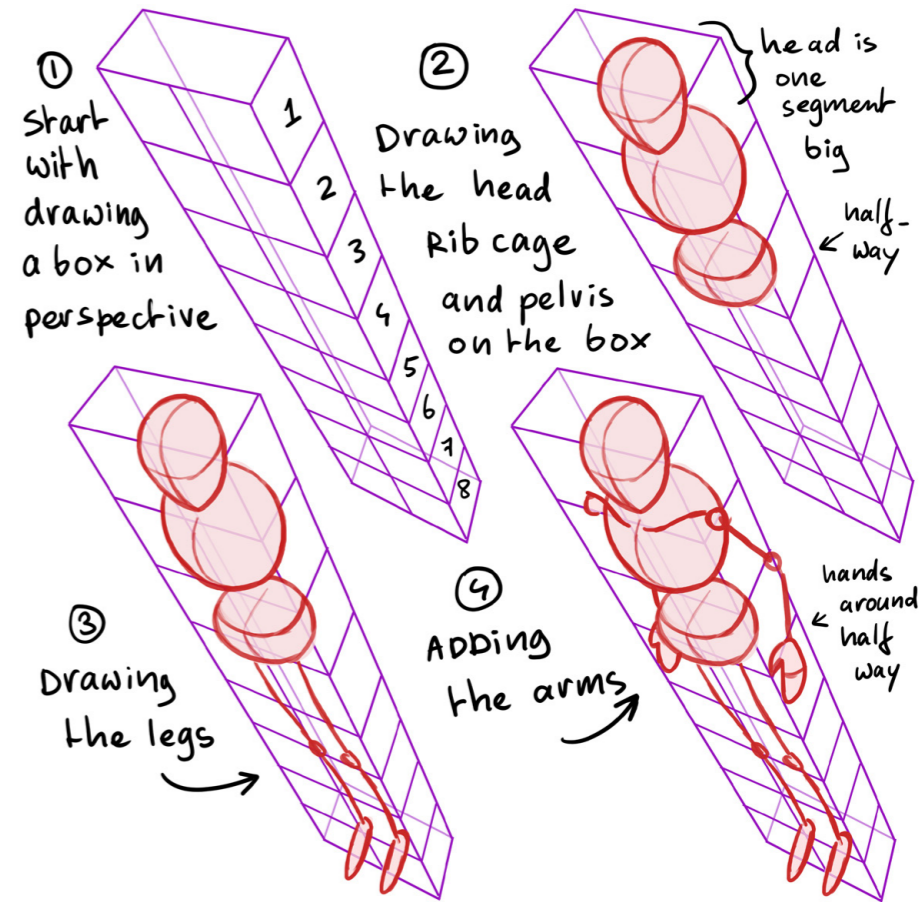
It can also help to draw a basic straight standing pose next to your drawing to check the proportions and where all those landmarks should be. This isn't mandatory, but it can help you troubleshoot if you feel that your proportions are off.

Beware that when you draw this way your drawings can become a bit stiff. When I sketch I try to be more relaxed and less precise than this. Because I have practiced the anatomy extensively, I am able to see the proportions without having to draw them each time. With a bit of practice, you should be able to as well!

Drawing the figure in perspective

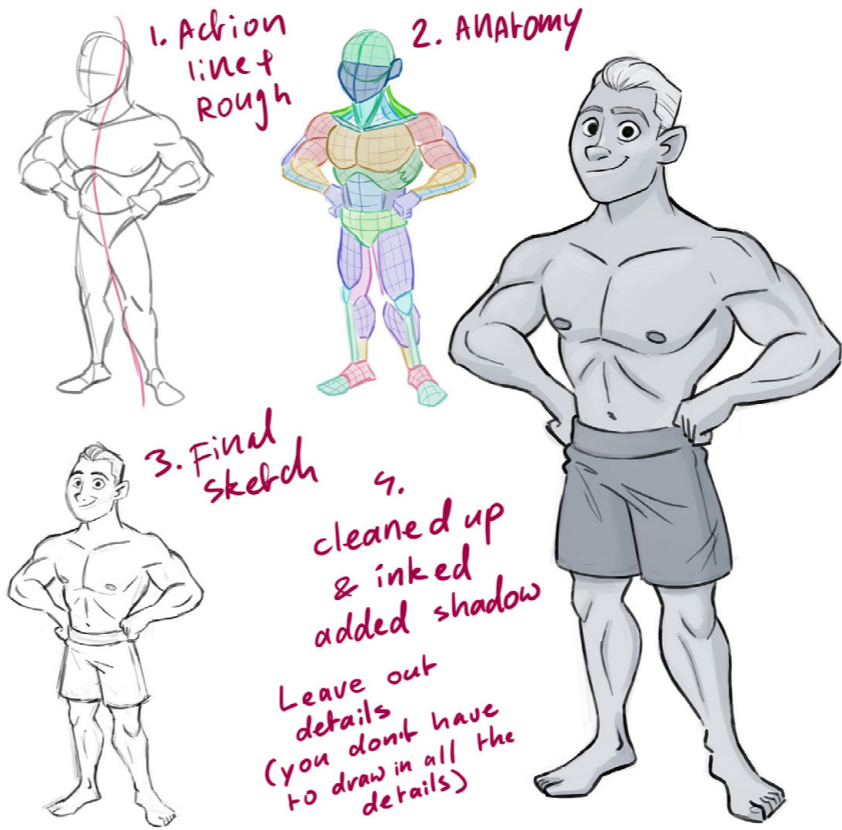
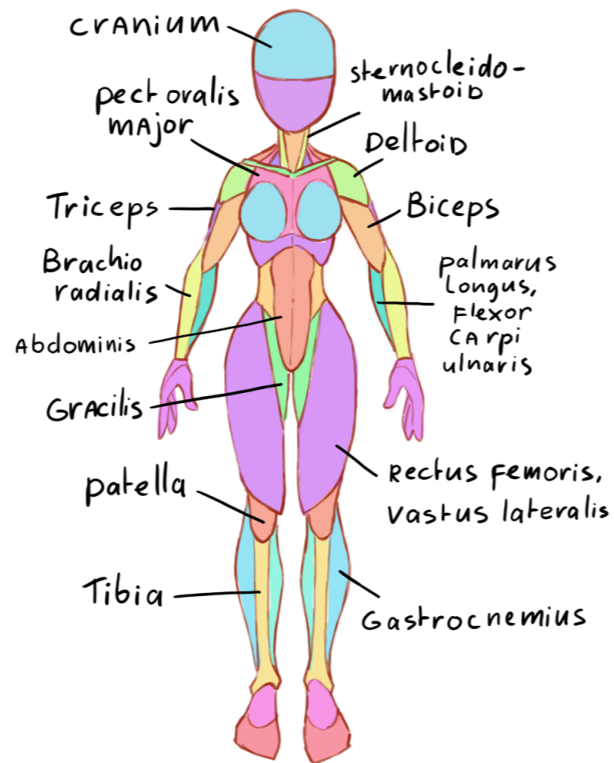
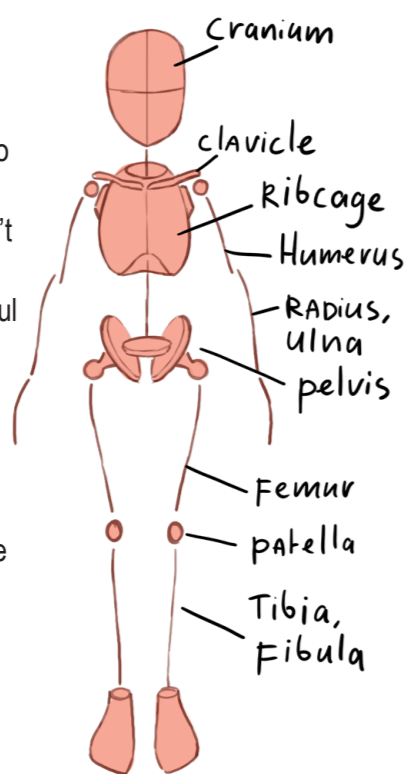


With this grid it's also a bit easier to draw the figure in perspective. First draw the grid and then divide it into eight parts.



Here you can see how I applied this to a more extreme perspective. Even when you don't draw backgrounds it's useful to learn how perspective works because it can help you with drawing the body in perspective this way.

Here is an image of the most important (for me) bones and muscles. I don't know all of the muscles and bones from memory so I use a reference like this when and if I need it. As I've said earlier, I don't think it's necessary to memorize all of the muscles and bones. It's helpful to be familiar with them so that you can limit the amount of referencing you need to do while drawing. I personally haven't memorized all of the names, but I do know how to draw the body. When I'm stuck I use images like these to help out.



Here you can see the steps I use to draw the muscles on my illustration. First, I draw a rough sketch and then add the anatomy. Before I finalize the sketch, I decide which muscles I'll show and which not. You need to decide which ones are important to show in your drawing. Most of the time the most important muscles to show are the large muscles like the biceps and the breasts. These large muscles are generally visible, whereas the smaller muscles, such as the biceps, need to be flexed in order to be visible.

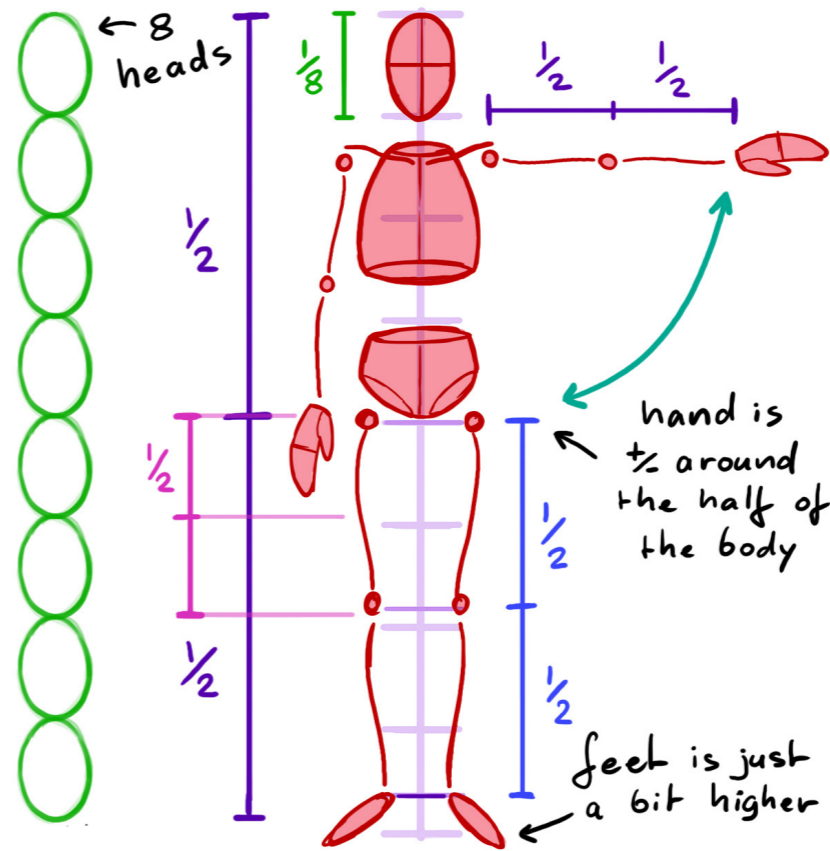
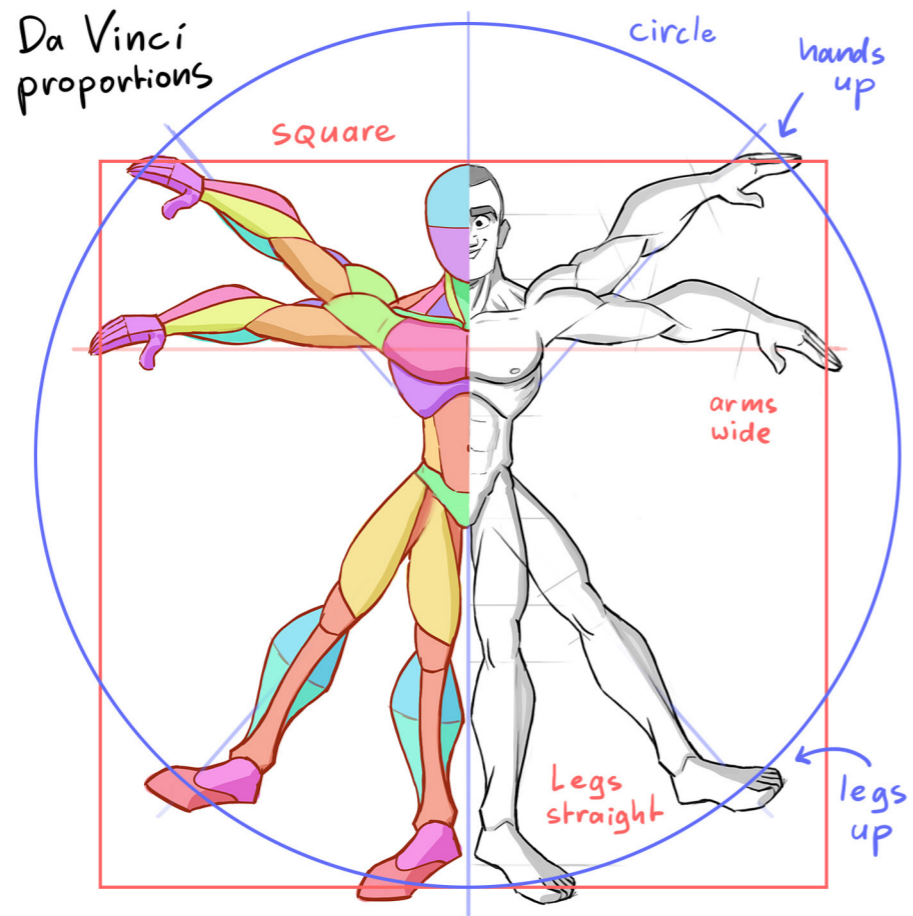


This illustration shows the skeleton with the muscles then drawn on top of it. The skeleton here resembles a stick figure. This is how I often start drawing a figure. On top of this base I add the shapes. Most of the time I add cylinders and cubes because my characters typically have clothes on, eliminating the need to show defined muscles.

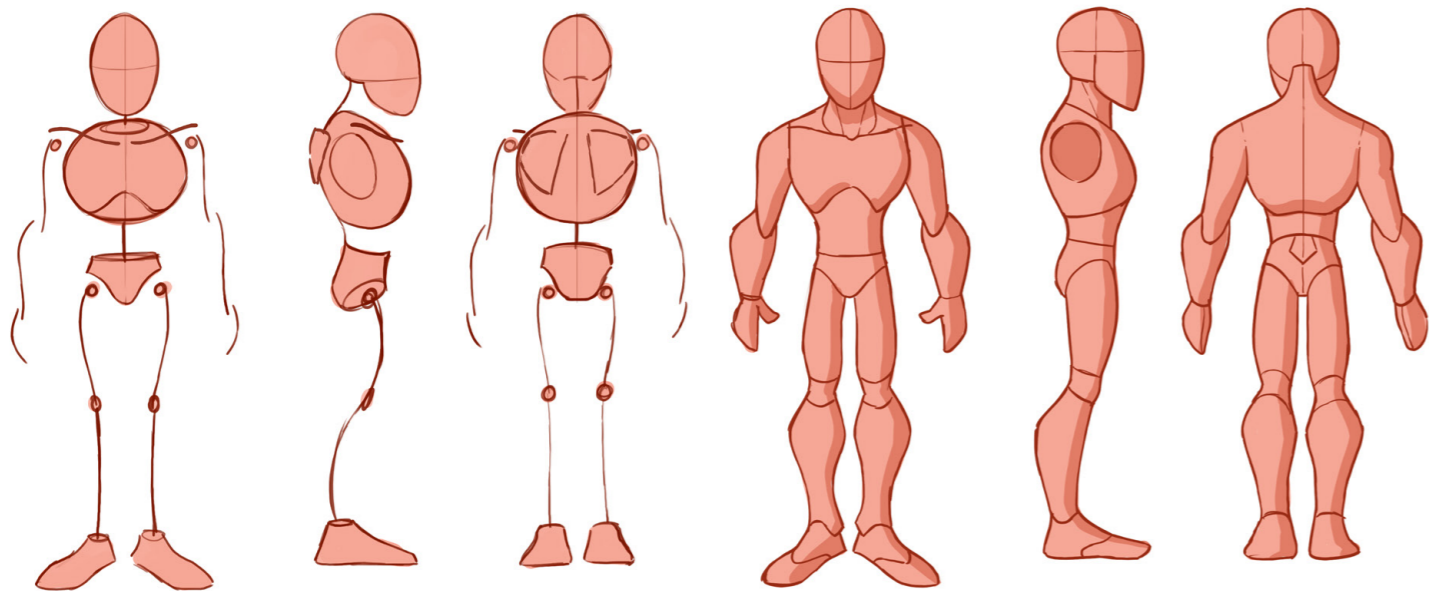


Here you can see the simplified muscles. Using these roundish shapes helps give the figure its volume and depth. Another reason why I like to use these kind of shapes is that it makes it easier to draw everything in different angles.

I saw this method from a famous da Vinci drawing. It's really interesting because you can see that if you hold your arms directly out from your sides, you create this square. When you hold your arms and legs in these diagonal lines, you create a circle.

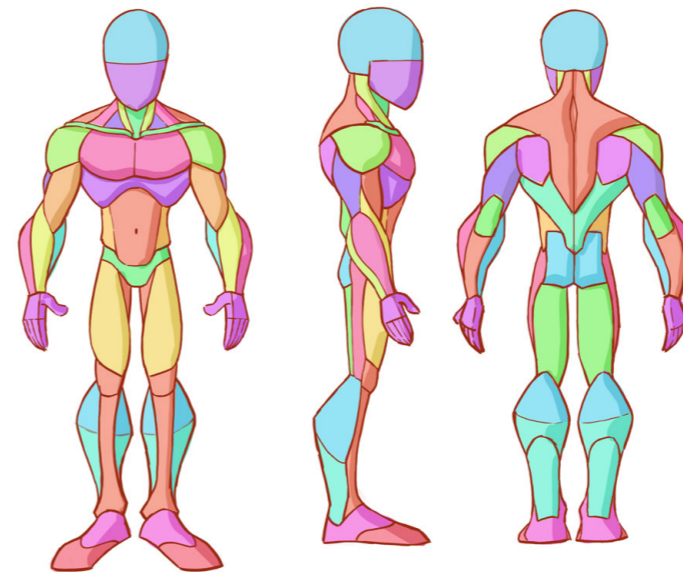


This is a more practical version of it showing how long the arms, legs and other elements of the body are. You can identify these proportions if you divide the height into these parts, like I showed before.

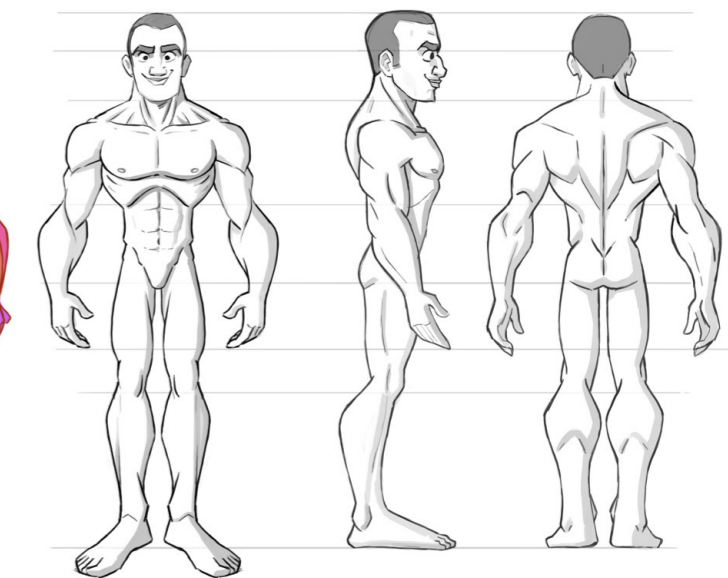


Above I show the process from the skeleton to simple basic shapes. The skeleton is a simple way to get the basics, including the proportions and the pose, right. The simple basic shapes are ideal to use when you're drawing

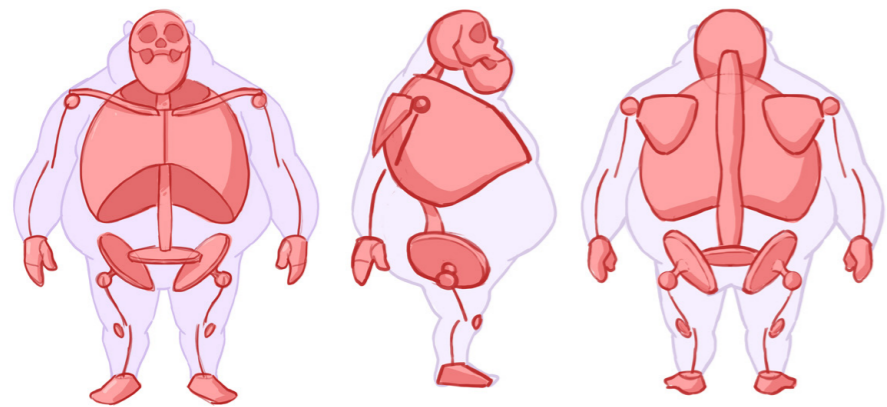
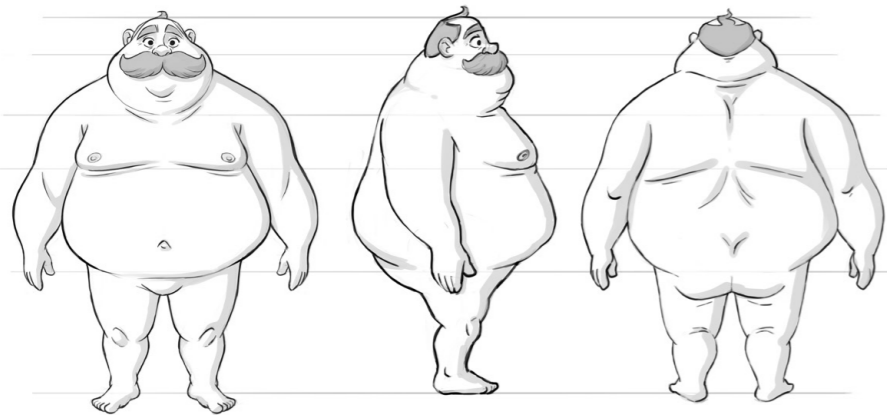
a character that is a bit in the distance or who wears clothing. This approach could be sufficient if you don't specifically need to show the muscles.



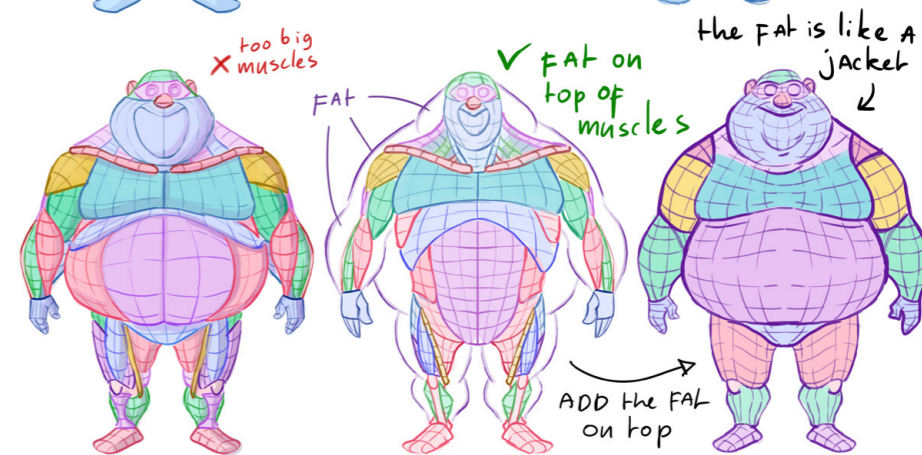
Then, we look at how to develop simple basic shapes to muscles. When you have a very strong character or a character that isn't wearing clothes, drawing the muscles can be necessary. I only draw them when I need them. In



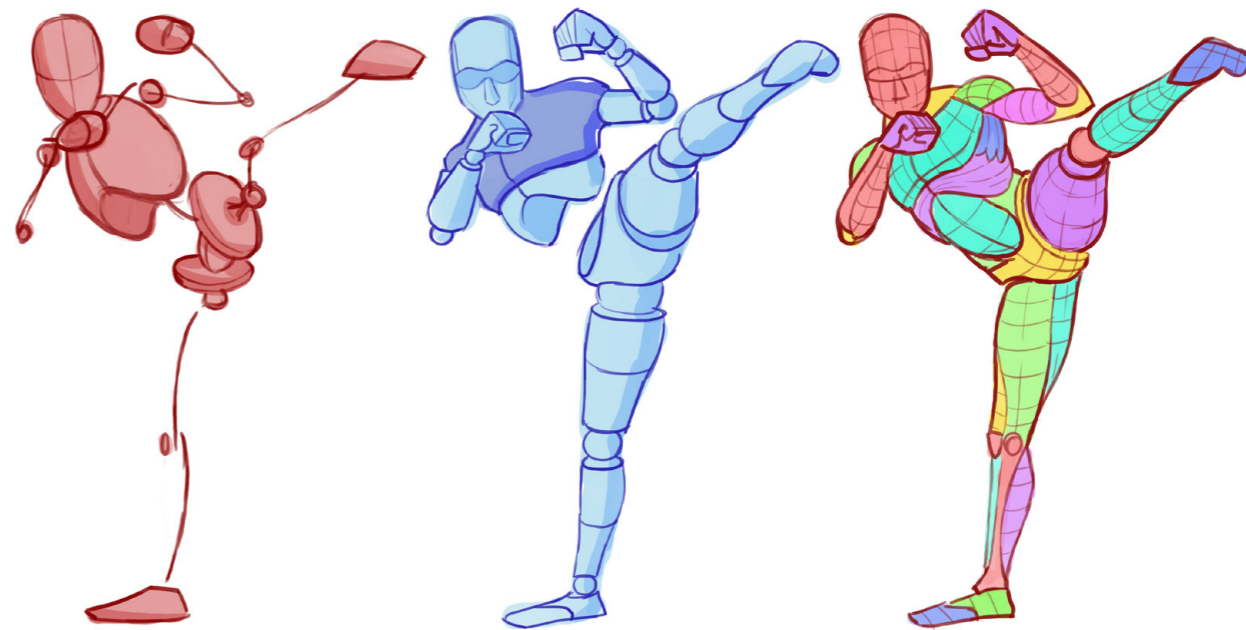
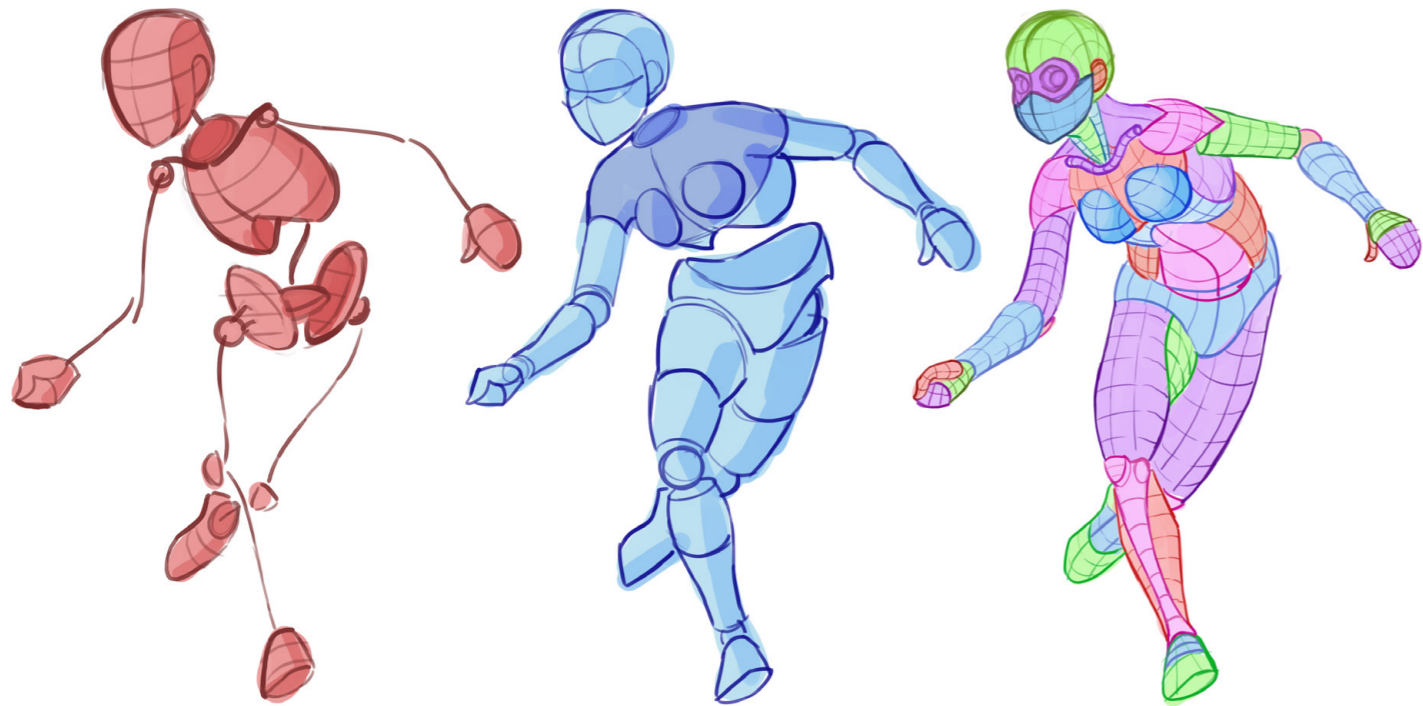
the figure on the right (black & white) you can see how we move from drawing the muscles to the final drawing.



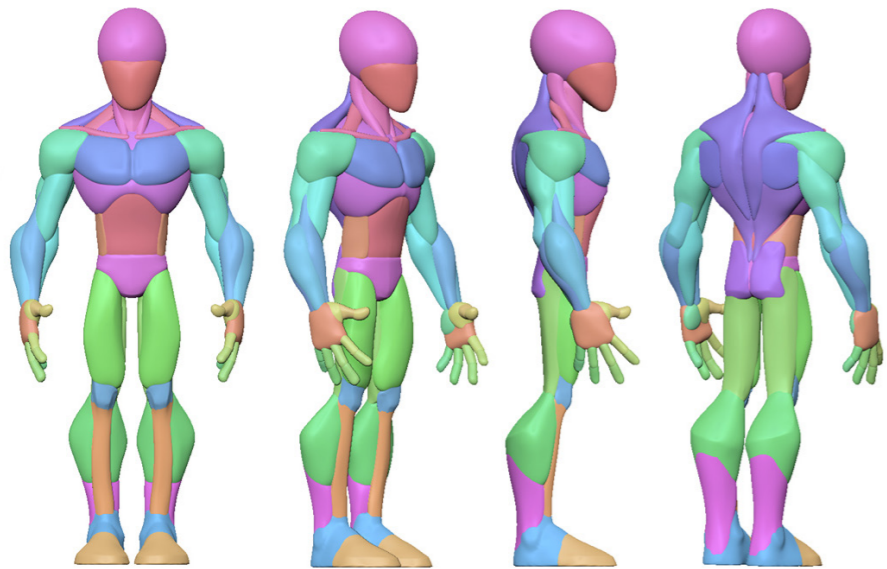
Here I drew a heavy character. Regardless of size, characters in principle have the same skeletal structure. In this example, I show how the skeleton can be adapted to a larger sized character. You can see the fat around the skull, arms and pelvis. This is particularly relevant when drawing a really stylized character.



With a larger sized character it's not the muscles that make that body large, but rather it's the fat on top of those muscles that give the character the shape. The fat is like a jacket. You can also see that when a character like this moves you can see how that tissue moves.

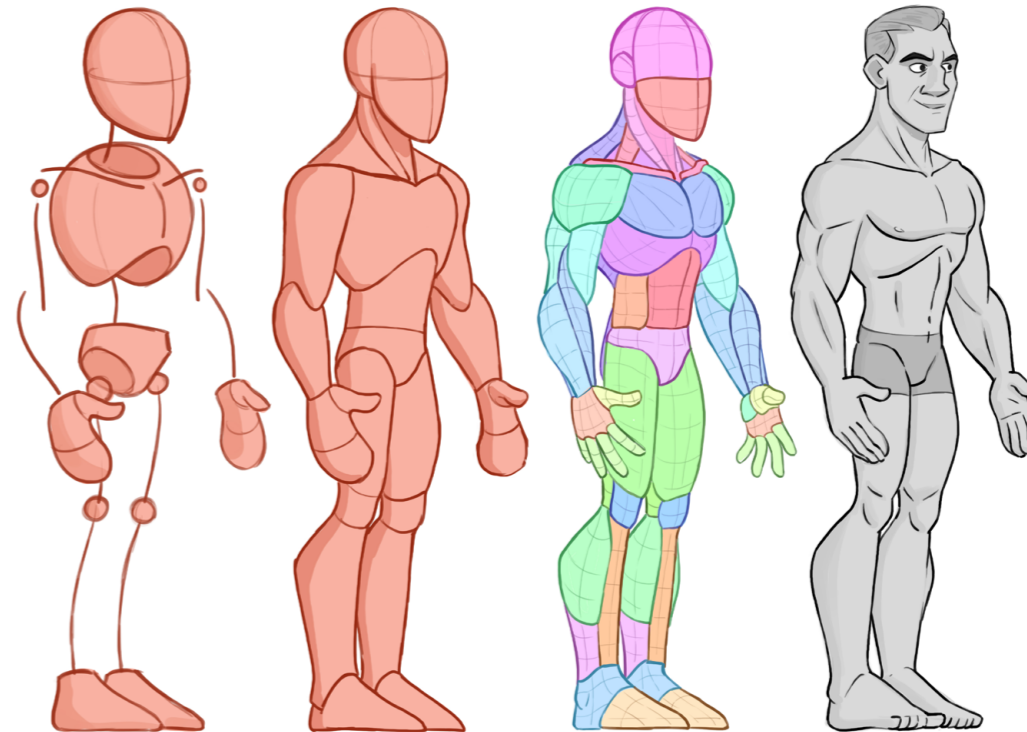
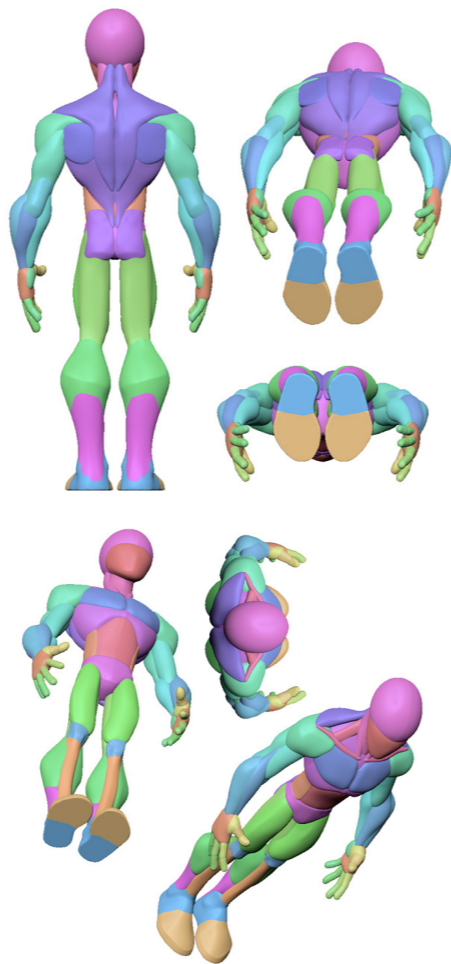


Once you have practiced all of the exercises from the previous pages, this exercise is a great next step. Find a photo you can use as reference from your favorite sport. Study the photo carefully. First, draw the skeleton. Then, draw big shapes around that skeleton. Finally, add the muscles like I've explained on the previous pages.

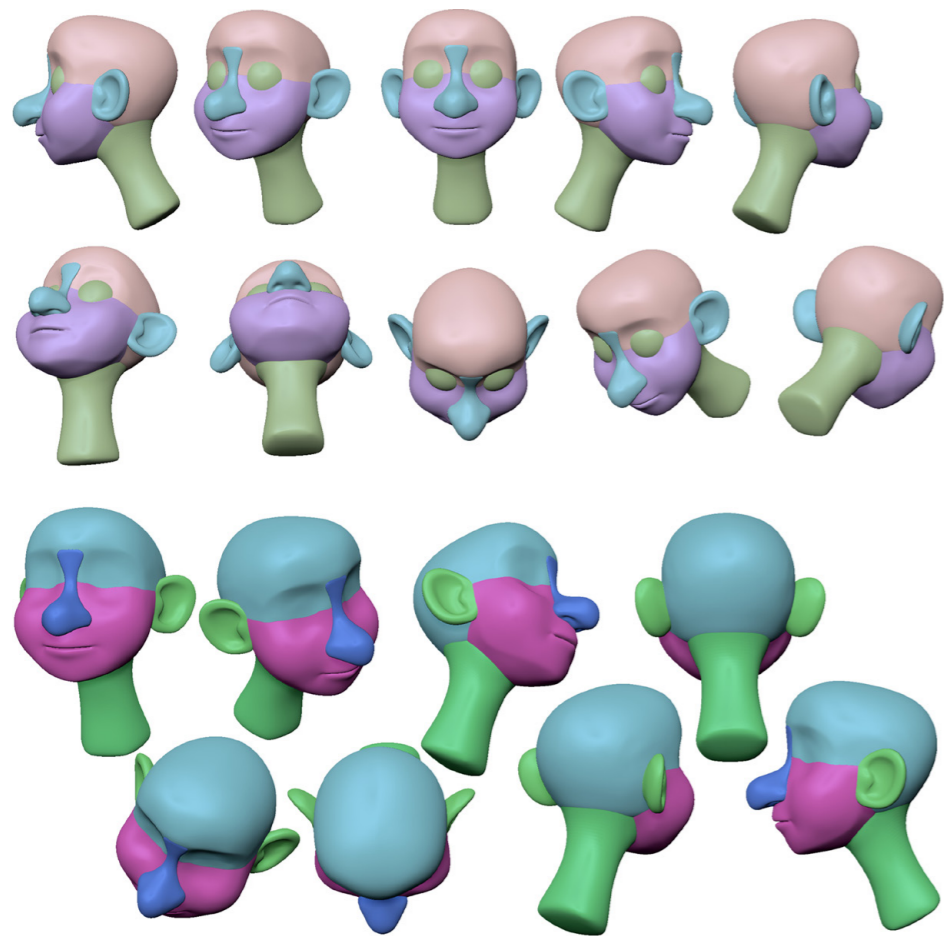


Shane Olson (3dcharacterworkshop.com) made these models based on my breakdown of the body. You can use these images as a drawing reference. Try to add the element of 3D to your drawings and observe how the shapes wrap around it.

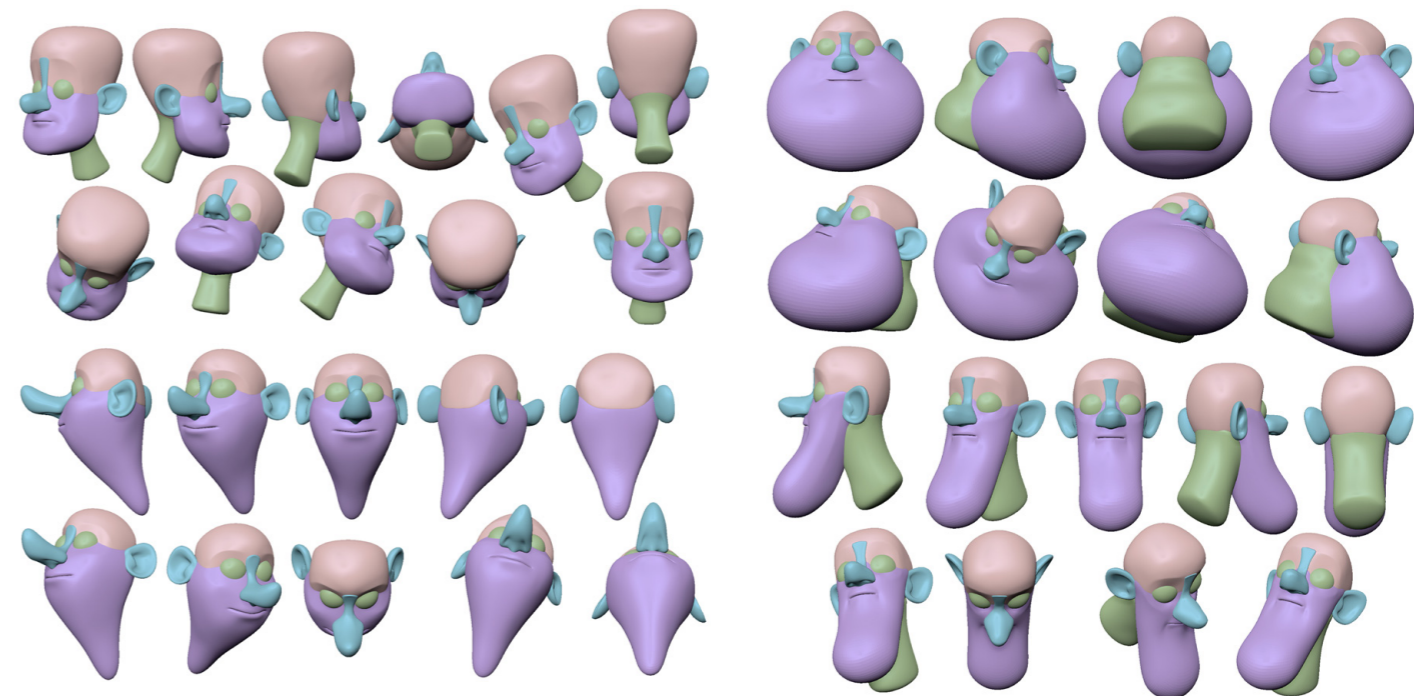
If you want to learn more about 3D modeling Shane Olson is a great teacher to follow: 3dcharacterworkshop.com.



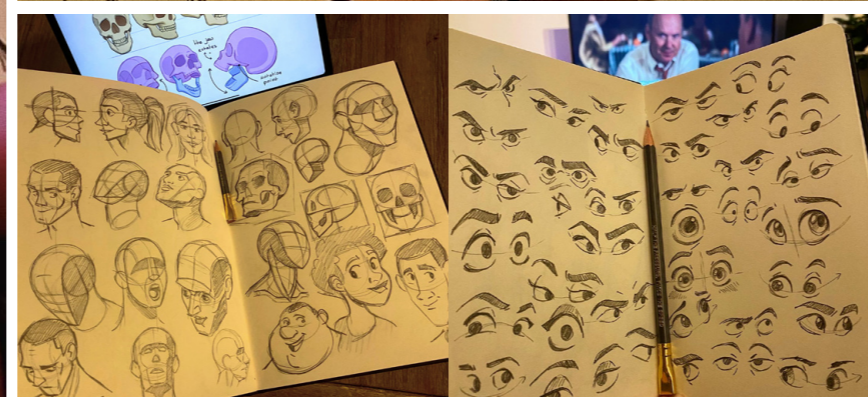
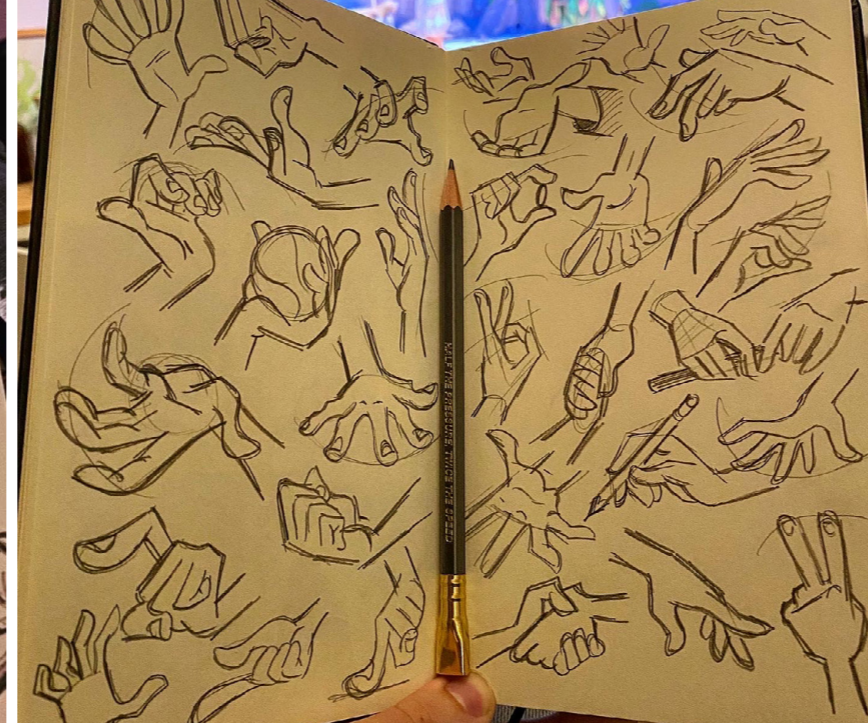
Here I used Shane's 3D model and added the muscles on top of it to get the $\frac{3}{4}$ view. This is an example of how you could practice with those images from the previous page.



These are some additional heads rendered in 3D by Shane Olson based on my drawings. Recreating these heads on paper is a great way of practicing drawing in perspective and can really help you think in a more three dimensional way.



CONCLUSION
& THANK YOU



SKETCHBOOK

Using a sketchbook is a great way of getting better at art! My goal is to fill two pages a day. Here I picked out some of my studies. Sometimes I go to my favourite search engine and look up some reference material. For muscles you can find some great pictures of bodybuilders flexing their muscles. You can also search for head angles, hands, eye expressions and more.

Just start sketching whatever inspires you!

THAT'S IT!

Thanks for reading the book. I hope it helped and you to have a better understanding of how to use and draw anatomy. All of these things definitely helped me and I'm still learning.

The thing with drawing is that you are never done learning. Being an artist is a bit like being a gardener. You always have to water your garden or it will become dry and eventually dies. So always keep learning and try to find

water for your garden. With this, I mean it's important to always keep studying and learning.

If you have any questions or want to show me some of your studies, drop me a message on my Instagram!

Best,
Mitch Leeuwe

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