#  Topic\_09 Robo Beens

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# [Landmarks of the Human Body](http://www.proko.com/landmarks-of-the-human-body/)

[Stan Prokopenko](http://www.proko.com/author/admin/) • August 13, 2013



Before we move on to applying structure and proportion to our figure drawings we need to learn the landmarks of the body.

The early stages of a figure drawing usually involve careful measuring and identifying the gesture. To help us with this, the human body is filled with landmarks that give us clues to the gesture and points from which to measure the proportions. These points are bony areas that show at the surface. Bones are good landmarks because they don’t change much between different body types. The skeleton structure of a thin, muscular and overweight person stays roughly the same, with some variation of course. It’s the muscle and fat tissue that shows the most dramatic changes.

As I point out the landmarks, try to identify them on your own body. Or if you’re watching this with a friend, feel the bony landmarks on your friend’s body… Awkwaaard…

We can use the fleshy points like the belly button and nipples to measure distances and angles while remembering that these points will vary a lot more between body types.

So, let’s go over all these landmarks.

### Centerline of the Front

Identifying the core gesture of the torso requires finding the landmarks along the center of the body. At the top we start with the pit of the neck between the clavicles. You’ll see a little indentation right above the manubrium. Work our way down to the bottom of the sternum, which combined with the manubrium looks like a neck tie. Below that is the belly button and finally the pubic bone. These points can be connected with a C or S curve. This usually influences the gesture of the rest of the pose.

### Centerline of the Back

In the back identifying the centerline is much simpler. The length of the spine gives you the shape of the centerline, from the top of the neck down to the tailbone.

It’s a common misconception that each vertebra has the same range of motion and can be connected with a simple curve. While you can and should do this to establish the gesture it’s not accurate to keep it that way during the structure stage and when adding the anatomy. The three sections of the spine have different limits to their rotation, flexion, extension, and lateral motion.

### Lateral landmarks of the Front

Next I can use the landmarks across the body to identify the twisting and curving of the torso. Reaching from the back are the bony protrusions of the acromion process which tell you the angle of the shoulders. You can feel the bony area on your shoulders between the deltoid and trapezius. Connecting the points of the acromion are the clavicles, shaped like bicycle handlebars.

While finding the points across the shoulders keep in mind that these points can also move independently from the ribcage. If someone raises one shoulder, the clavicle will rotate from the pit of the neck, changing the angle of the shoulders while keeping the same angle of the rib cage.

The front corners of the iliac crest tell you the angle of the pelvis. These points are called the anterior superior iliac spine, or ASIS for short. As you’ll see next week, these points are great for identifying the box of the hips.

The other points that I frequently use on the front torso are the armpits. I look for the distance from the top of the shoulders and the width of the arms compared to the width of the torso.

### Lateral landmarks of the Back

The back of the body also has some landmarks we can use to find the angles, although some can be trickier to find on softer or overweight body types. An average or muscular back has a lot of bumps and is always a challenge for artists. To create order out of all the chaos, the bony landmarks of the scapula are very helpful. First, the Spine of the Scapula is this diagonal ridge from the acromion process to this corner called the triangular expansion. Like the clavicles in the front, these also resemble handlebars. From the corner the ridge takes a sharp turn downward along the medial edge. These edges are not covered by muscles, so you will see hints of them on the surface.

The 7th cervical vertebra is another commonly used landmark.

Moving down to the hip region, we have a major landmark at the sacrum. A triangular shape that connects the tail bone and the two dimples at the Posterior Superior Iliac Spine. Or PSIS..

### The Limbs

In the arms and legs, the landmarks are basically the joints.

On the sides of the elbow are the epicondyles of the humerus. When the arm is extended these 3 points are aligned in a straight line. When the elbow is bent, the olecranon (a fancy word for “tip of the elbow”) moves down and forms a triangle.

Follow the ulna down the arm to the wrist. At the wrist, the radius and ulna bones create flat top and bottom plane that are great for showing the rotation of the wrist.

The knee is very complex, so I’ll go over it in a lot more detail during the anatomy series, but to try to simplify it I remember that there are 7 bumps. Two for the condyles of the femur and two more for the condyles of the tibia. A little one on the side at the head of the fibula. One bump for the patella and another below it caused by a combination of the tibia, a ligament and a fat pad.

When the knee bends the tendon will pull the kneecap down and under the femur.

The curve of the tibia is very prominent and an important part of the gesture of the leg.

At the ankle, the tibia and fibula form a wrench shape that hugs the foot. The angle between them goes downward toward the outside.

And finally, the Greater Trochanter! A bony protrusion on the side of the hip. All the muscles of the gluteus wrap around it like a donut.

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So, those are all the landmarks of the body. The best way to learn them is to draw from life or from photos and try to identify them. Use them in the construction of your drawing. If you want to see me draw this figure while applying the landmarks, get the premium access to the entire [Figure Drawing Fundamentals Series](http://www.proko.com/figure/). In there you’ll also find a downloadable diagram of the landmarks to use as reference, a lot of example videos from previous lessons and expanded version of each lesson.

# [How to Simplify the Motion of the Torso – The Bean](http://www.proko.com/the-bean/)

[Stan Prokopenko](http://www.proko.com/author/admin/) • July 16, 2013



Premium extended version of this video and full Figure Drawing Series available – [Figure Drawing Fundamentals](http://www.proko.com/figure)

There are 3 major masses connected by the spine. Head, rib cage and pelvis. In this episode we’ll take a look at the two that make up the torso.

### What is the bean?

Hey guys, you’re watching Proko. So, what is the bean? The torso could initially be thought of as a bean. no not that bean.. mmm, not that one either. That’s the same bean! This one… This is the bean I’m talking about. We have two forms, one for the rib cage and another for the hips. You can even just imagine a sock with two balls in it.. Whatever analogy you want to use. Basically we have two hard forms with a softer “skin” around them.

The balls can twist, tilt side to side, and lean forward or backward. The cloth of the sock will stretch, pinch, or twist accordingly, which represents the way the skin would react to the same motion on a human body.

To be more specific about what these ovals actually represent, here’s how I think of it. The rib cage isn’t a perfect oval. The curve stops at around the 10th rib and then swings back up to the sternum. But, to simplify it, I’ll continue the curves of the sides and use an oval.

The oval of the hips actually includes the area above the hips. It continues up the oblique and meets the top oval at the thin part of the waist. As a result, the two ovals will overlap.

### Why practice the bean?

The concept I’ll be talking about today is a very simplified approach. It obviously doesn’t get you a realistic figure drawing, but it’s the concepts behind it that we’re learning. Then once we understand these concepts we can apply them to a realistic more complex approach.

Sometimes what I have my students do in my figure drawing class is a 20 minute session of 30 second poses just doing the beans. I tell them, they’re not drawing a person. Don’t think of this as a figure drawing. Instead it’s an analogy for the body. These are little notes that you could use later on in longer figure drawings. It’s the form of the torso represented in the simplest way. The reason we do this is to eliminate all details and not get distracted by contours or smaller forms. We do it to isolate what’s important in capturing the motion and mass of the torso.

### How to practice the bean

Take poses and draw the equivalent bean at its extreme. Take note of that last part. You’re drawing an extreme version of the pose. So if there is a subtle twist, make that twist even “twistier”. A lean to the right? Lean it further. The process of exaggerating these elements creates a habit of actually observing each element. The things we look for to identify in the bean are:

1. Tilt side to side
2. Lean forward and backward
3. Twisting of the spine
4. Foreshortening

### Tilt side to side

Let’s start with a tilt from side to side. When there is a tilt, or a curvature of the spine towards one side, there will always be a compressed side and a stretched side. As these points move closer to each other, everything between them bunches up. You’ll see wrinkles going across the torso. On the other side, these points move away from each other stretching everything between them. I’ll always try to emphasize the stretching here and play down any kind of muscular bumps that would take away from the stretching effect.

Here’s a pose with a subtle tilt. Find the angle of the rib cage. Angle of the hips, considering also the position relative to the rib cage. It’s a common mistake to always put the two forms one on top of the other. Observe the angle from the top of the rib cage to the bottom of the hips.

Adding an action line will also help to identify this relationship. A centerline will emphasize the c curve of this pose and show that it is slightly facing towards the left, since the center is closer to the left edge of the form.

### Lean forward and backward

The second action is leaning forward or backward. It’s pretty much the same effect of a tilt. The side where the points are compressing will get the pinch and the opposite side will get a stretch. The only difference is that now the centerline is on the stretching or pinching side. If the person leans towards us, there will be a crease on the front plane. And the centerline itself also has a pinch. This sharp corner creates the tension in the front plane. On the back, show the stretching gesture line.

When the person leans back away from us, it’s a bit trickier to indicate with a bean. This looks too similar to a tilt. It’s hard to show this because the pinch is back there. It’s hidden from us. The only way to show that the forms are going away from us is with some cross contour lines, which indicate foreshortening similar to these cylinders.

### Twisting the spine

Alright! The twist! I love doing the twist.

During a twisting motion, the skin will be pulled from one side of the form to the other. Let’s look at what happens to this towel when I twist it. The string represents the centerline. At the top the plane twists this way and at the bottom the other way. On this side the lines will overlap from the top, on the other side they overlap from the bottom. Things are being pulled across the form to these corners. Sometimes it’s confusing to figure out which side will overlap, which one is in front and which is behind. Basically, the two corners that are closer to us will have the lines that overlap the corners further from us. Makes sense because objects that are closer to us are in front of objects further from us. It’s basic perspective.

The centerline is now an S shape rather than a C during a tilt or lean.

So let’s take a look at two angles of the twist with the bean.

In this pose we’re looking at a twisting torso from the side. This means we see the centerline of the front plane at the top and the centerline of the back at the bottom. There’s a transition from one to the other. As the front plane gets thinner and the center line starts to wrap behind, on the other side the spine starts to come out from behind and twisting towards us. So only a portion of the centerline is visible on each side.

When looking at a twist from the front or back you only see one of the planes, but it’s being twisted. In this pose, the pit of the neck is closer to the left side of her body and the pubic bone is turning toward the right side.

### Foreshortening

When a figure is extremely foreshortened you’ll observe two changes. The first is a change of the oval shapes that indicate the rib cage and hips. We’re no longer seeing the full length, so the ovals will be shorter. The second change is the position relationship between these ovals. One will overlap the other and sometimes cover up most of it. This shows that the rib cage is directly in front of the hips so the torso is pointing directly toward us.

In this pose, she’s leaning toward us, creating a lot of foreshortening. I’ll make sure to keep the oval more circular and overlap them a bit more than usual. I like to put a dot on the north and south poles of these forms. This helps me imagine how to wrap the centerline over the top plane. I also see a twist since the belly button is pointing to the left.

### What’s next?

After establishing the bean, attaching the head and limbs is much easier. The action of the torso is the most difficult and most important to capture the body in motion. I’ll talk a lot more about this part in the mannequinization video in a few weeks.

### Assignments

This week, practice drawing the bean from the [pose photos](http://www.proko.com/poses/). It shouldn’t take you more than 30 seconds to a minute for each pose. Look for tilting, leaning, twisting, and foreshortening. Exaggerate the motion and draw the two volumes, the skin in between, and the centerline. [Submit for critiques](http://www.proko.com/critiques/)

# [How to Draw Structure in the Body – Robo Bean](http://www.proko.com/robo-bean/)

[Stan Prokopenko](http://www.proko.com/author/admin/) • September 3, 2013 • [2 Comments](http://www.proko.com/robo-bean/#comments)

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Premium extended version of this video and full Figure Drawing Series available – [Figure Drawing Fundamentals](http://www.proko.com/figure)

In this episode we’ll add structure to the bean to create the Robo Bean.

If you haven’t seen [the bean](http://www.proko.com/the-bean/), [structure](http://www.proko.com/structure-basics-making-things-look-3d/) or [landmarks](http://www.proko.com/landmarks-of-the-human-body/) videos, you might be a little confused with some of the things in this video because we’ll be taking the bean and adding structure to it based on the landmarks. so click to watch those now!

### Why use Robo Bean?

A few weeks ago we met the Bean. After you’re comfortable with the bean, it’s time to move on to his friend, Robo Bean. The Robo Bean is great because it combines the motion from the bean with 3d form. Now we’re able to show the side planes to show rotation and top or bottom planes for tilting and leaning.

These drawings are gonna be extremely stylized and by no means is it a finished drawing or how I’m saying you should draw. This is however exactly what I’m thinking about when I analyze the form. So showing this simplistic exercise is a great vision into the thought process. It’s also just a really good exercise to practice to see and draw three-dimensional form. You should be able to freehand cylinders and boxes from any angle and get the perspective right as I explained in the structure video a few weeks ago.

### Review cylinders and boxes

This exercise is very similar to the bean exercise except now instead of using balls we’re gonna use boxes. Boxes are little bit more advanced, but more effective because now you have plane changes to better explain the orientation of the forms. Spheres are not effective in showing perspective as I explained last week. You can’t see a sphere as three-dimensional unless you add tone. Without tone a sphere is just a circle. A cylinder introduces perspective because it has a plane change at the top and bottom. A box shows even more perspective because it has a plane change from the front to the side plane, along with top and bottom planes.

### Landmarks

Ok so let’s take a look at the details of the Robo Bean and what exactly the boundaries represent. The top box is the rib cage and a portion of the shoulders. The bottom is the pelvis combined with the butt.

Remember those landmarks we went over last week? Well they’re really going to come in handy as you construct the Robo Bean. Almost every edge or corner falls on a specific area along the body. Let’s start at the top!

The top front corners of the first box align with this corner on the clavicles. At the bottom, the corners of the 10th ribs indicate the bottom of the box. These 4 corners give us the front plane of the box. On the backside, the ridge of the spine of the scapula provides the edge between top and back plane. Just stretch that back plane to the length of the ribcage. Sometimes it’s hard to tell exactly where those corners are because the ribcage in the back is covered by the muscles. But the exact points are not important. Just make sure to get the length and angle correct.

The top plane is everything between the scapula and clavicles. You have to ignore the trapezius muscle to see this. This is a very important plane to show when the body is leaning forward or backward toward us. Usually I’ll even extend this to the edges of the shoulders, but we’ll save that for the mannequinization video.

Connect the side planes for the sides of the ribcage.. And the bottom plane doesn’t matter much. The space between the boxes is filled with guts and other fun stuff.

Lets move on to the bottom box.

The most useful corners, I feel, are the ASIS. The corners on the front of the pelvis. They’re extremely important to find the angle of the pelvis. Unfortunately, there aren’t any good points to indicate the bottom of the front plane. You’ll just have to use your imagination and extend them from the pubic bone. Follow the edge of the iliac crest until the PSIS for the side planes. The back plane starts at the PSIS and includes the mass of the gluts. The rounded part at the bottom of the gluts is the edge where you can show a bit of a bottom plane.

And again, the top plane doesn’t matter because of the guts thing.

Together all these points form the two boxes connected by the spine, which moves the boxes.

### Differences between genders

The proportions are going to vary from person to person. That’s why its good to know what landmarks youre looking for on the body. So that you can analyze those points on the person youre drawing and measure the proportions. Generally, the ribcage and pelvis on a male are about the same width. On a female the ribcage is thinner and the pelvis is wider. There’s variation within genders – some men have wider hips and some women have wider shoulders. Mentally identifying the body type before you draw it will help.

### Motion

With the addition of the top, bottom and side planes we can show the motion and position of the body with more detail than with the bean.

The corners help to show the tilt side to side with the angles from one side to the other.

The top and bottom planes help to show the leaning forward or backward

And the side planes help to show twisting.

### More about the Twist

This brings me to an important part about the twist that I forgot to mention in the bean video. I showed with the towel that the overlaps come from the corners that are closer to us. This is true from the side view of the torso, but from front or back, its actually the opposite! Here’s a better explanation for getting the overlaps right..

figure out which side of the body you’re seeing completely. The overlaps are the ones parallel to this rhythm.

If you’re looking at the side, then the side plane is being twisted like this. And the front and back plane will wrap back around the side plane. If you’re looking at the front plane, then the same thing happens here, but now the side planes wrap behind the front plane and the center line is following this S curve rhythm.

So basically the overlapping lines are going to follow the rhythm of the plane we’re looking at.

With the robobean its actually much easier to see why this happens. Here the side plane is wrapping behind the front plane, so this edge would overlap this one. On the other side same thing..

### The Stuff Between

One of the hardest areas for people is the connection between the ribcage and pelvis. In the [premium video](http://www.proko.com/figure) I explain how to draw the area between the two boxes and will show A Lot of examples - <http://www.proko.com/figure>

### Assignments, Critiques and Giveaway!

Alright so the assignment for this lesson is pretty obvious.. Just find some poses (plenty available at [proko.com/poses](http://www.proko.com/poses)) and draw the Robo Bean for that pose… You’ll probably have a bunch of questions, concerns, mistakes you might have made. So, next week I’ll post examples of me drawing the Robo Bean which hopefully will address some of your questions..

Also, keep submitting your exercises for critiques. I’m going to combine the submissions from the bean, structure, landmarks, Robo Bean and mannequinization lessons into one critique video.. Since all these lessons are related to building forms.

So if you want to submit for a critique:

1. do the assignment from this week’s lesson
2. Post your drawings on your Facebook page, tumblr, blog, forum, wherever you like to post your artwork
3. In your post make sure to mention this video and include a link to it
4. Email me and tell me where I can find your drawings
5. Make sure to follow the guidelines that I describe on [proko.com/critiques](http://www.proko/com/critiques)

# [Robo Bean Examples – Step by Step](http://www.proko.com/robo-bean-step-by-step/)

[Stan Prokopenko](http://www.proko.com/author/admin/) • September 9, 2013 • [4 Comments](http://www.proko.com/robo-bean-step-by-step/#comments)

Last week I showed how to find the structure of the torso using the Robo Bean. In this video I’ll show you 5 examples of applying the Robo Bean to various poses.

#### Resources:

For this lesson we are going to use series of video tutorials by Stan Prokopenko aka Proko, an artist and drawing teacher.

YouTube Channel - [**https://www.youtube.com/user/ProkoTV**](https://www.youtube.com/user/ProkoTV)

Website: <http://www.proko.com/human-figure-proportions-cranium-unit-hale/>

Personal Website - [**http://www.stanprokopenko.com**](http://www.stanprokopenko.com/)