

THE  
ANATOMY  
ISSUE 01



total

3dtotal's free emagazine

02

## Editor's letter

Welcome to total magazine issue two! Over 6,000 of you downloaded – and enjoyed (how could you not!) – issue one, and we hope just as many of you enjoy the latest issue. This month's focus is squarely on anatomy, with a mix of traditional, 2D, and 3D tutorials to get stuck into. So polish those tools, crack your fingers, and refine that muscle definition or nail that pose!

Jahirul Amin takes us through the body's bony landmarks, Jose Lazaro models hands in 3ds Max, Steve Rude take us through his process for drawing poses in Photoshop, Mike Corriero gives us a creature design 101, and Rafael Ghencev sculpts a classic Greek sculpture. We also pick out some of our favorite 3dtotal.com gallery images from the last couple months!

But first, turn the page to learn what the 3dtotal team are up to at the moment...

**Adam J Smith**  
Editor

## What's inside

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**New addition to the team**

To kick off this quarter’s round-up of 3dtotal activity, we have a new addition to our small team. Jess, a recent graduate, joins us as an online editor. She will be responsible for online marketing campaigns, social media posts, and creating content for our new mini

sites, so whenever you’re chatting away to us in posts you could be speaking to Jess! She says she’s a real foodie and her favorite thing to do when she’s not at work is to bake. She’ll fit right in then as cake o’clock is as regular on the schedule as book planning meetings! (Or more so!)

Just off preorder is *Beginner’s Guide to ZBrush*. We recruited the likes of industry professionals Raul Tavares and Ruben Alba to produce an amazing guide for newcomers to ZBrush. The book offers a thorough introduction to the program, with in-depth tutorials that guide the beginner through ZBrush’s essential tools, using accessible techniques. Everything from organic and hard-surface sculpting, to rendering and 3D printing, is covered in this high-quality, informative volume.



**New titles**

There’s been a number of new titles added to the line-up since the last issue – some of which have been released already, and others on pre-order or coming soon. One of which was previously mentioned, but is proving to be very popular: *Mythical Beasts*, a beautifully

presented (if we do say so ourselves) hardback of beastly illustrations.

Artists explore myths from around the globe to design and create a wide variety of creatures, from yeti to leshy, unicorns and nue. Books purchased from our shop also

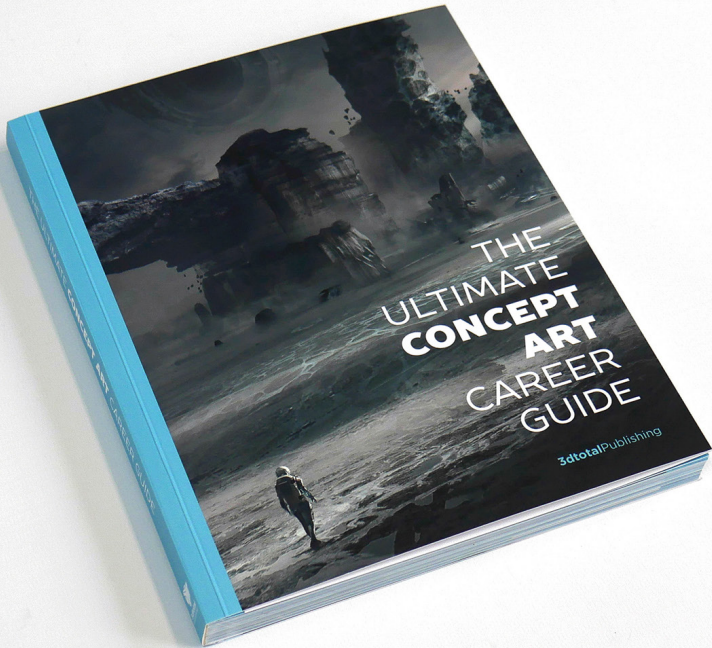
receive an exclusive card game featuring the beasts; a game of strategy for two players, designed by resident game magician Greg Carslaw, where creatures are pitted against each other, with the winner the first to kill four of the opponent’s creatures.



• MYTHICAL BEASTS •  
AN ARTIST'S FIELD GUIDE TO DESIGNING FANTASY CREATURES

**“A really beautiful hardcover book with insight in the design process of a variety of artists and full of inspiring artwork”**

**3dtotal customer**



THE ULTIMATE  
CONCEPT  
ART  
CAREER  
GUIDE  
3dtotal Publishing

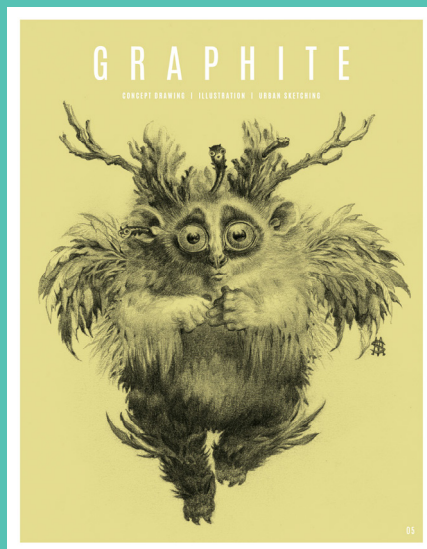
**“This guide breaks down valuable information that I would have found tremendously helpful during the early and even more recent phases of my career”**

**James Paick**  
Creative Director and Concept Artist at Scribble Pad Studios

For a while now we’ve considered publishing a career guide (we came close on a couple occasions) and finally we’ve done it! The printers are finishing up on *The Ultimate Concept Art Career Guide*, a book absolutely jam-packed (seriously, we’ve never squeezed so many words into so many pages) with expert insight covering topics that range from launching and evolving a career; tips and articles about creating a winning portfolio; developing a social media presence; the practicalities of an art career – within a studio and freelance – and handling the ups and downs of a career in general. This will be on pre-order from 13 November.



In addition, we saw *GRAPHITE* issue 05 and *Character Design Quarterly* issue 02 head out to subscribers. *Character Design Quarterly* had a great start on Kickstarter, and we're excited that reviews have been really positive for the first two issues, drawing in yet more subscribers. We're also pleased to see that a lot of *GRAPHITE* subscribers from the first year went on to resubscribe for another year – we hope to be able to bring you these publications for years to come.



**“Brilliant magazine! Huge attention has been paid to even the smallest of details, ending up with a high quality product. I would definitely recommend”**

Graphite customer



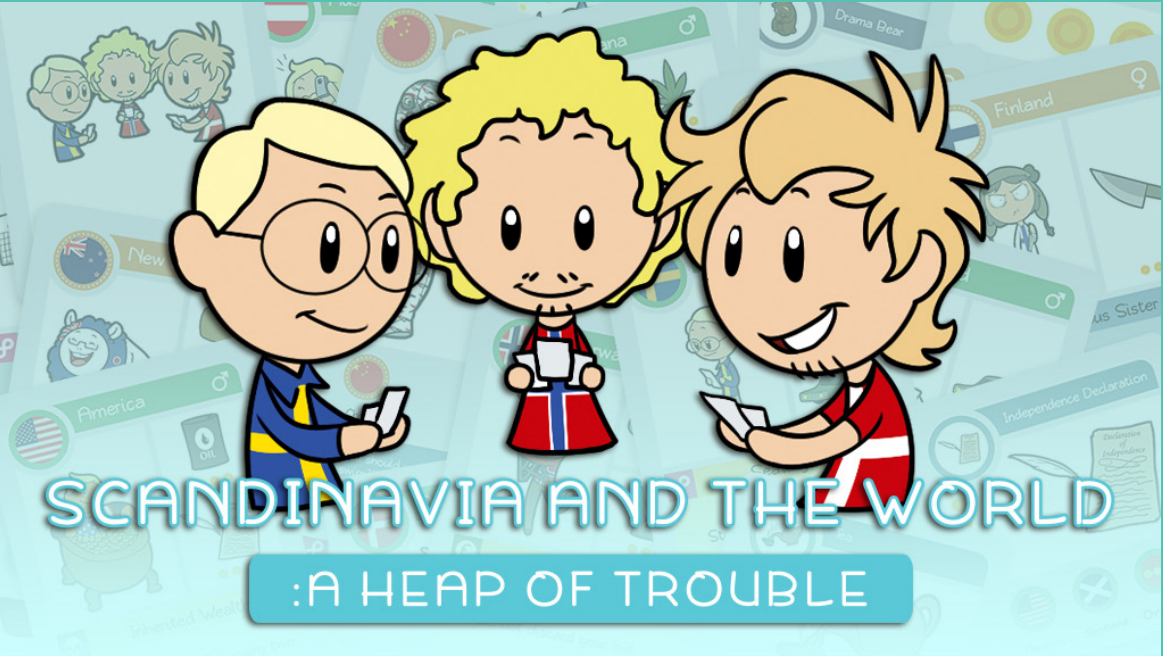
**“It’s simply amazing! The book has hands-on tutorials on designing characters and gives new ideas to focus your character design”**

CDQ customer



Kickstarter success

The previously mentioned Greg Carslaw, who created the card game for *Mythical Beasts*, teamed up with the artists and writers from the *Scandinavia and the World* webcomic for their “Heap of Trouble” Kickstarter. Long-time fans of the comic and fans of Greg’s games flocked to pledge their support, and it was a massive success in the end with over 3,000 backers. The 3dtotal team will be working to bring this all together for an estimated delivery of next March, and we can’t wait for people to have fun with it.



Eco-friendly

At 3dtotal we have always strived to be as environmentally friendly as possible, which is why we now always print on FSC paper, which is paper that is responsibly and economically sourced. In addition, we have teamed up with two UK-based printers to offset the amount of travelling that our books need to do, printing locally whenever viable. Character Design Quarterly is printed just down the road in Cardiff, and new titles are printed just up the road in Leicester. Our mail packaging is also as eco-friendly as we could make it, dropping the bubble wrap in favor of recyclable flatpacks and cardboard wrap. The figures are currently tightly packed in foam cut-outs, and we are also looking at eco-friendly solutions to ensure the foam used is consistently recyclable and sustainable.

We couldn’t mention Kickstarter without mentioning Loish. When this magazine goes out the Loish Kickstarter will have been over for nearly a month, and we’ll probably still be rubbing our eyes in disbelief at the total raised – a whopping £383k (we like to convert it to US dollars to say it raised half a million!) Nearly 10,000 backers who cannot wait to get their hands on the book (and the stretch goals) such is the warmth and support given to Lois and her work. This surpassed even the first one. Our goal now is to repay the faith and ensure the highest quality book possible is printed and delivered to the doorsteps of each and every backer.



“Lois DELIVERS! Stunning every time... you won’t be disappointed!!!”

3dtotal shop customer, The Art of Loish



# 3dtotalAnatomy

[shop.3dtotal.com](https://shop.3dtotal.com)

## Anatomical reference figures

Whether you use pencil and paper, paintbrushes, clay, ZBrush, Maya, 3ds Max, or Photoshop, 3dtotal's anatomical reference figures are invaluable if you want to understand the form and structure of the human body. All figures are cast in neutral gray resin to make the variation in the surfaces easy to discern.

### The range includes:

Male half-skin/half-écorché

Female half-skin/half-écorché

Male écorché

Female écorché

Male skin

Female skin

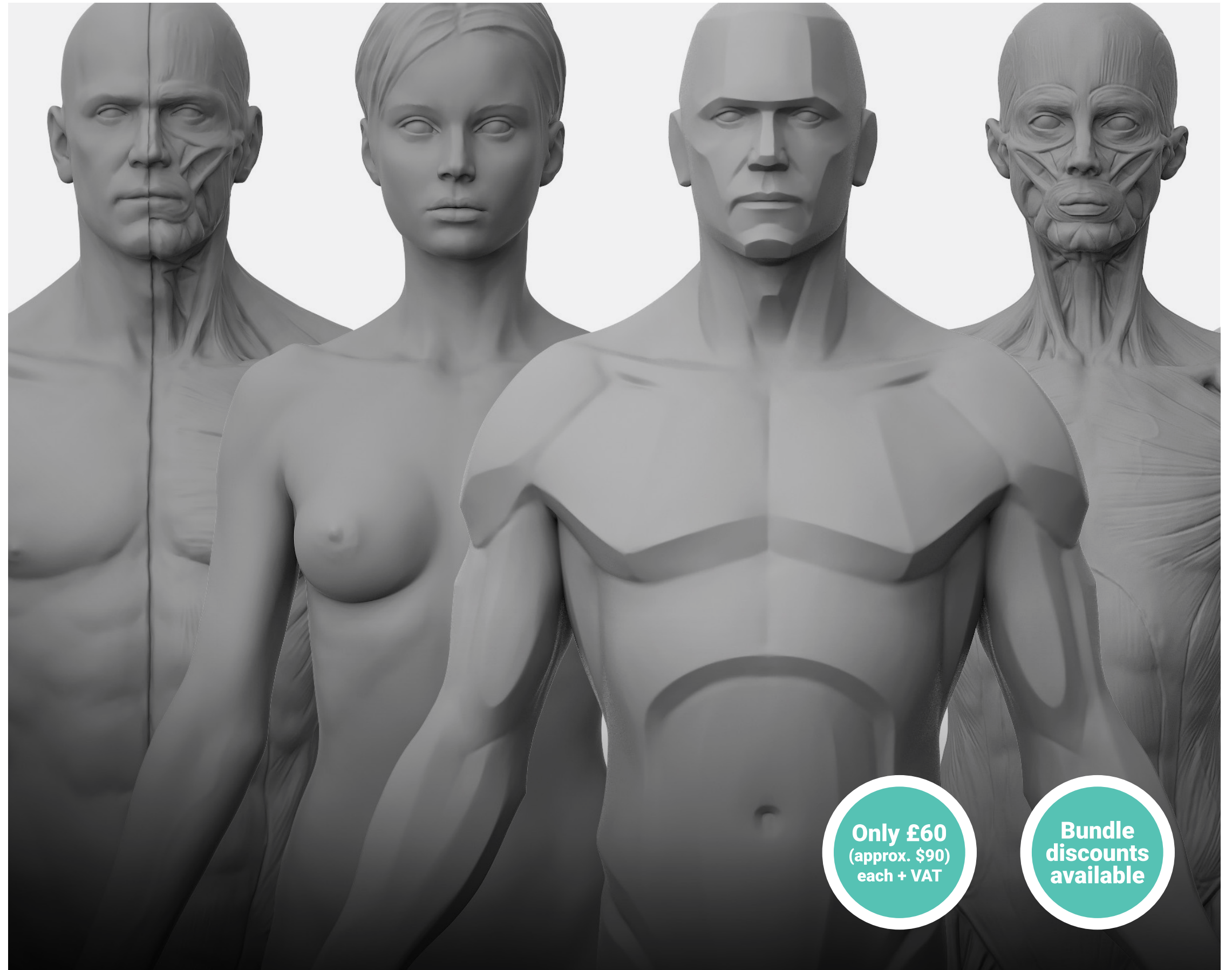
Male planar

Female planar

Adaptable male

Male half-basic/half-complex planar bust

Female half-basic/half-complex planar bust



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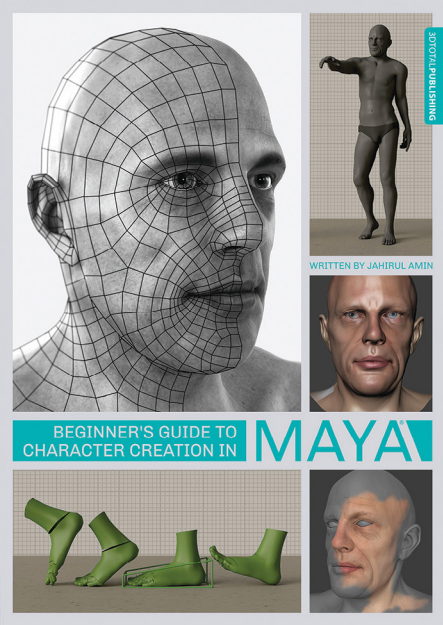
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# Learning the bony landmarks

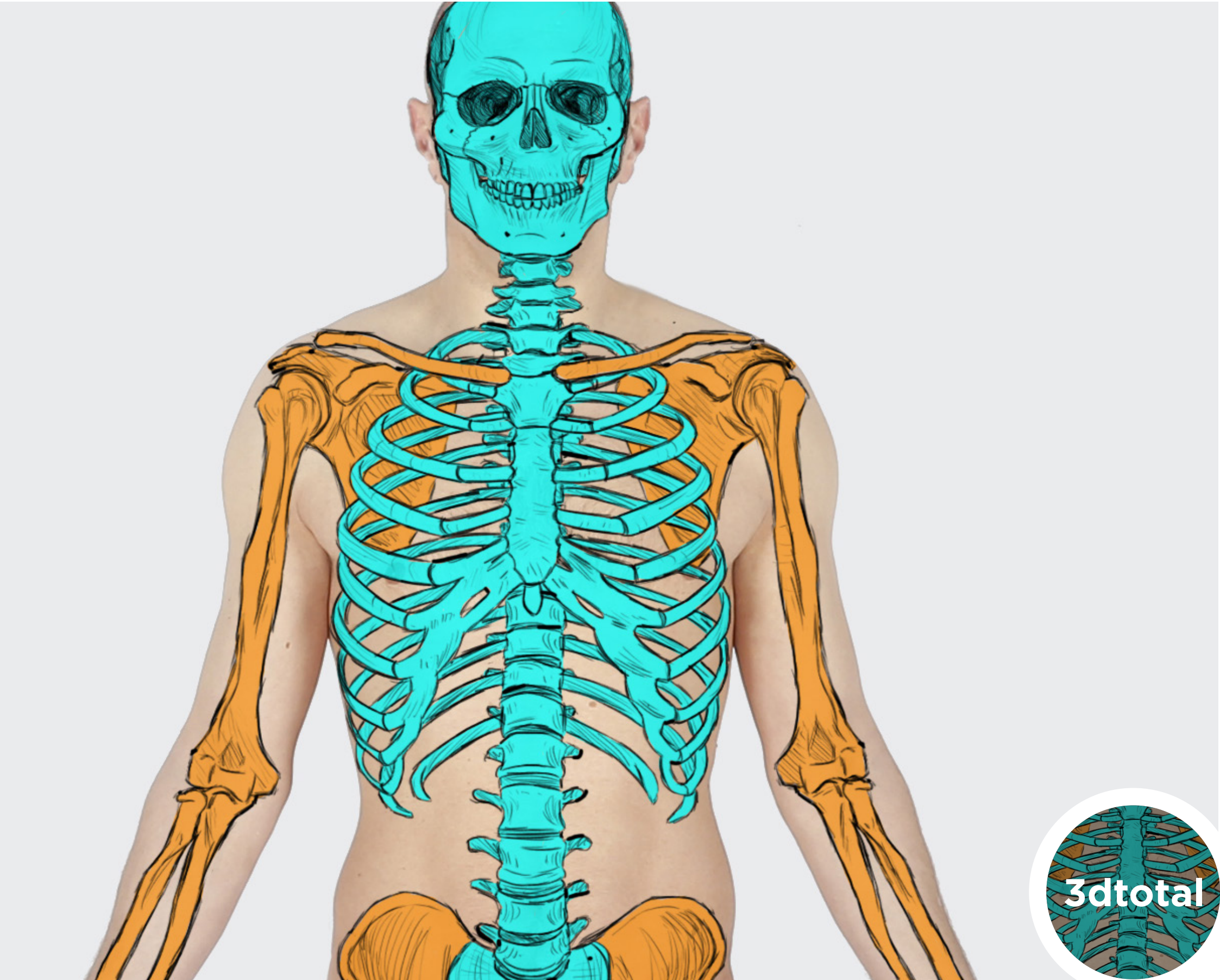
By Jahirul Amin  
Web: [jahirulamin.com](http://jahirulamin.com)

**Featured in:**

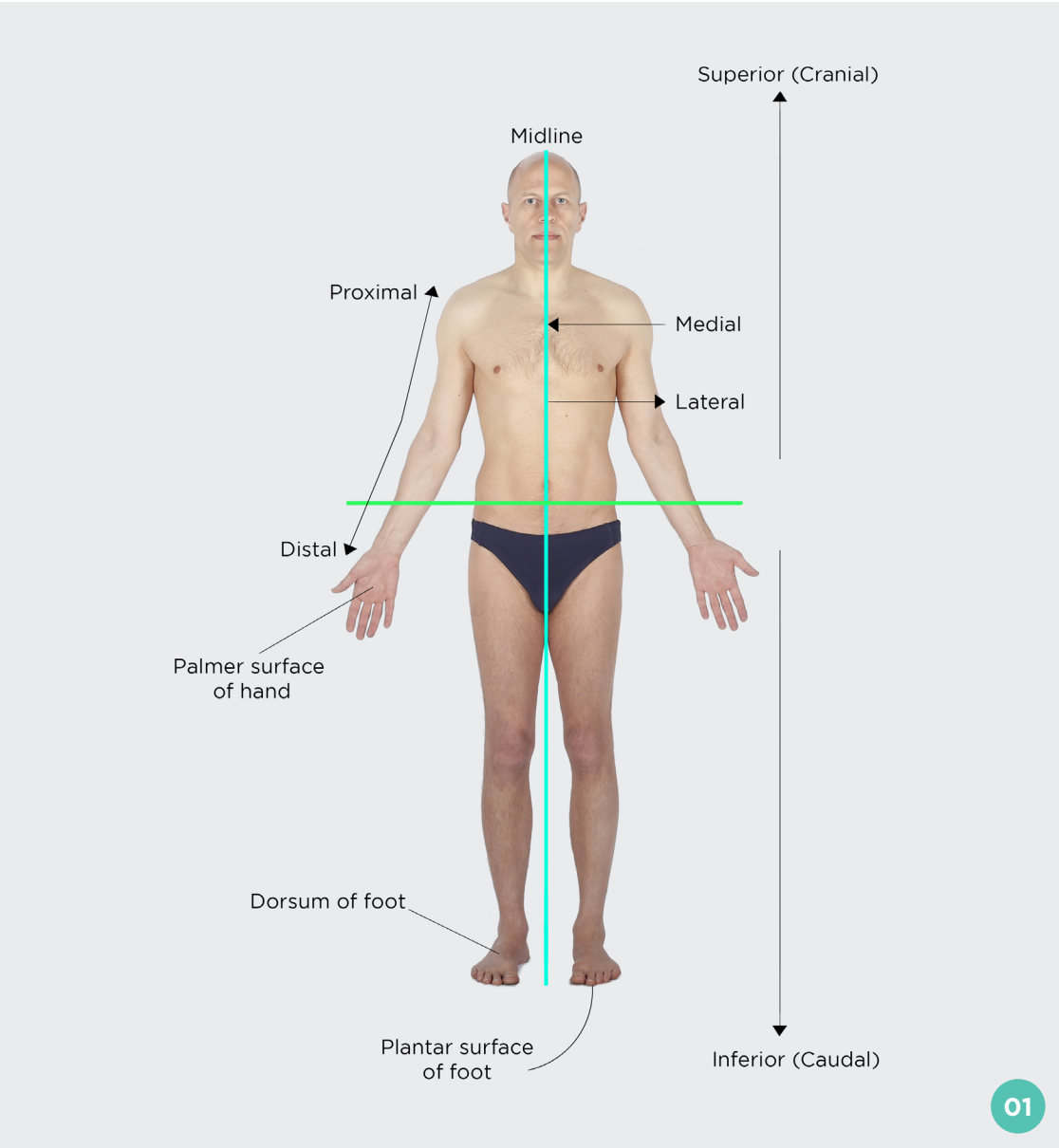


**Beginner's Guide to Character Creation in Maya**

Available from [shop.3dtotal.com](http://shop.3dtotal.com)







- 01**  
The supine anatomical position
- 02**  
The supine anatomical position from the anterior aspect

Computer animation, whether hyperrealistic or totally fantastical, must be believable; the audience must be held or the illusion has not worked and we haven't done our job. The key to this believability is the real-world basis for the work we do. At every stage of the CG pipeline, be it modeling, rigging or animation, for example, there's some study which needs to be done of the real-world background that should feed and inform your work.

A CG torso must move in such a way that there is evidence of a rib cage lying beneath

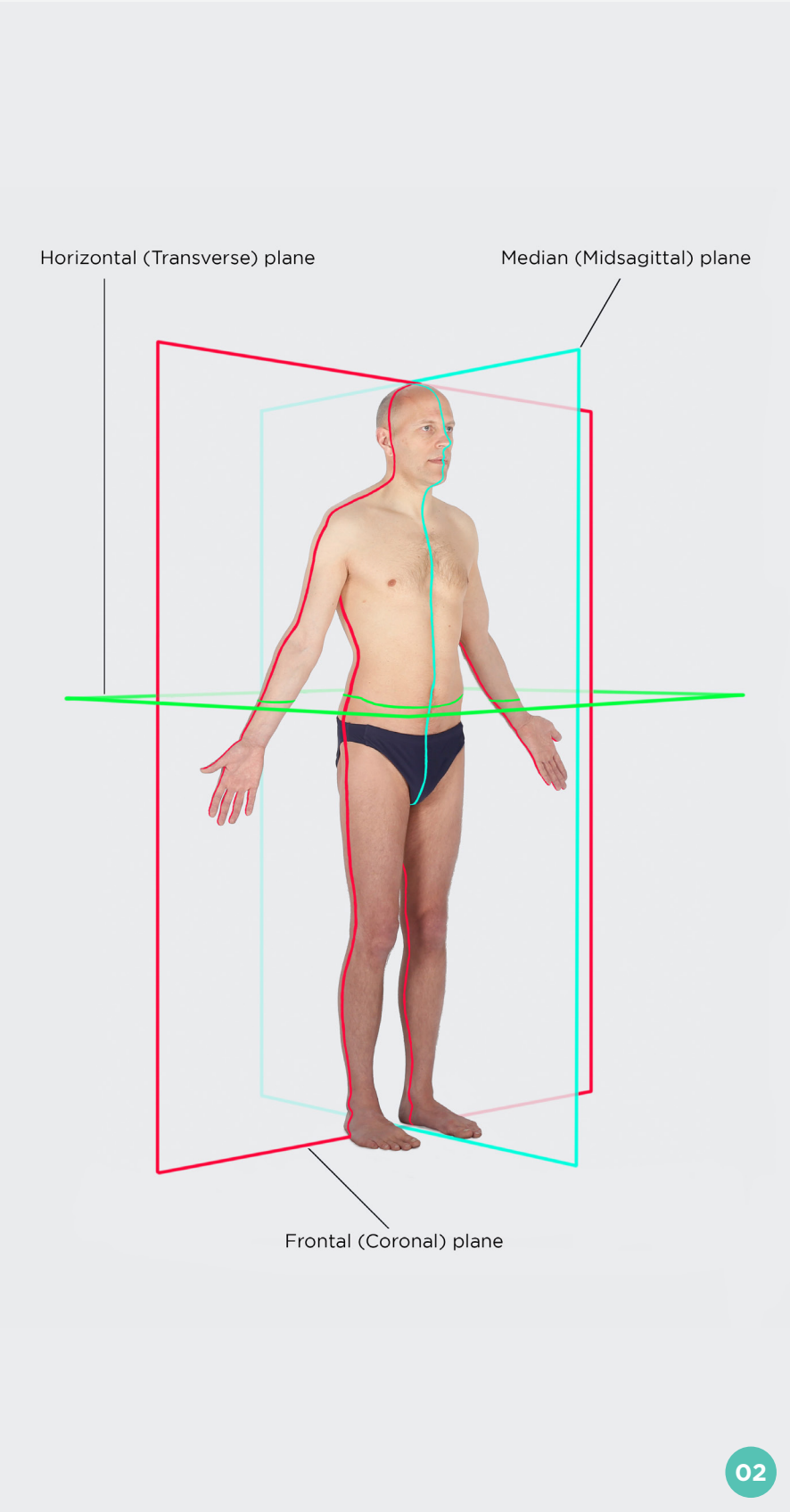
the skin, or the illusion is broken. What we need, therefore, is an understanding of human anatomy and kinesiology, however rudimentary it may be.

This tutorial will be devoted to providing an overview of human anatomy. Volumes could be filled about this fascinating, complex, and surprisingly controversial subject. However, as our objective is to recreate the human form in CG, we will primarily focus on the bones that affect the surface and can be "seen" at the level of the skin.

**01 The anatomical position**

Bones, muscles, and tendons can feel daunting when the language of anatomy is unfamiliar. Before we proceed, let's take a look at the anatomical position. This will allow you to develop an understanding of the vocabulary used when describing the position and orientation of different parts of the body.

It will also give you a common language to communicate with other artists, rather than having to describe a part of the body as "that hard bit under there and to the left."



The anatomical position is a pose in which the forms can be clearly examined and described. The body stands erect, face and eyes looking forward. The feet stand 6 to 8 inches apart with the toes forward. The arms are down to the side with the palms forward and thumbs pointing outwards. This pose is the "supine anatomical position."

**02 The anatomical planes**

We can now use anatomical planes to describe and separate the different locations of structures and see how they relate to other structures of the body. The three main anatomical planes are:

- the horizontal plane, which divides the body into the superior (upper) and inferior (lower) portions
- the median plane, which divides the body from the left to the right portion, creating the midline
- the frontal plane, which divides the body into the anterior (front) and the posterior (back) portions

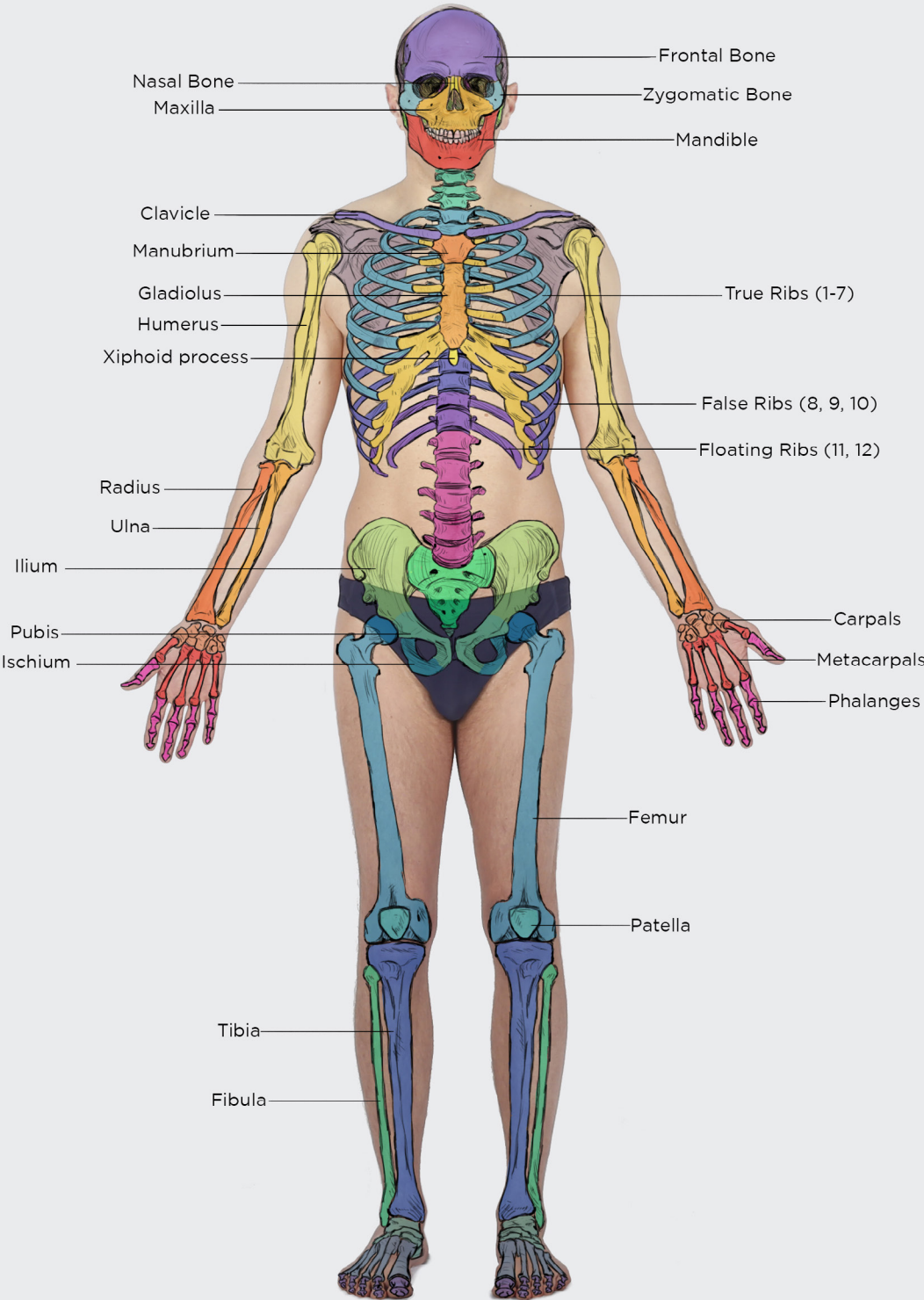
The terminology used to describe the relationship of one structure to another can appear complicated; so here is a quick breakdown of some of the key terms used in regards to position and orientation:

Term	Description
Superior/Cranial	Closer to the head
Inferior/ Caudal	Closer to the feet
Medial	Towards the midline
Lateral	Away from the midline
Posterior/Dorsal	Towards the back
Anterior/Ventral	Towards the front
Proximal	Closest to
Distal	Farthest away
Supine	Palm up
Prone	Palm down

03 The skeleton

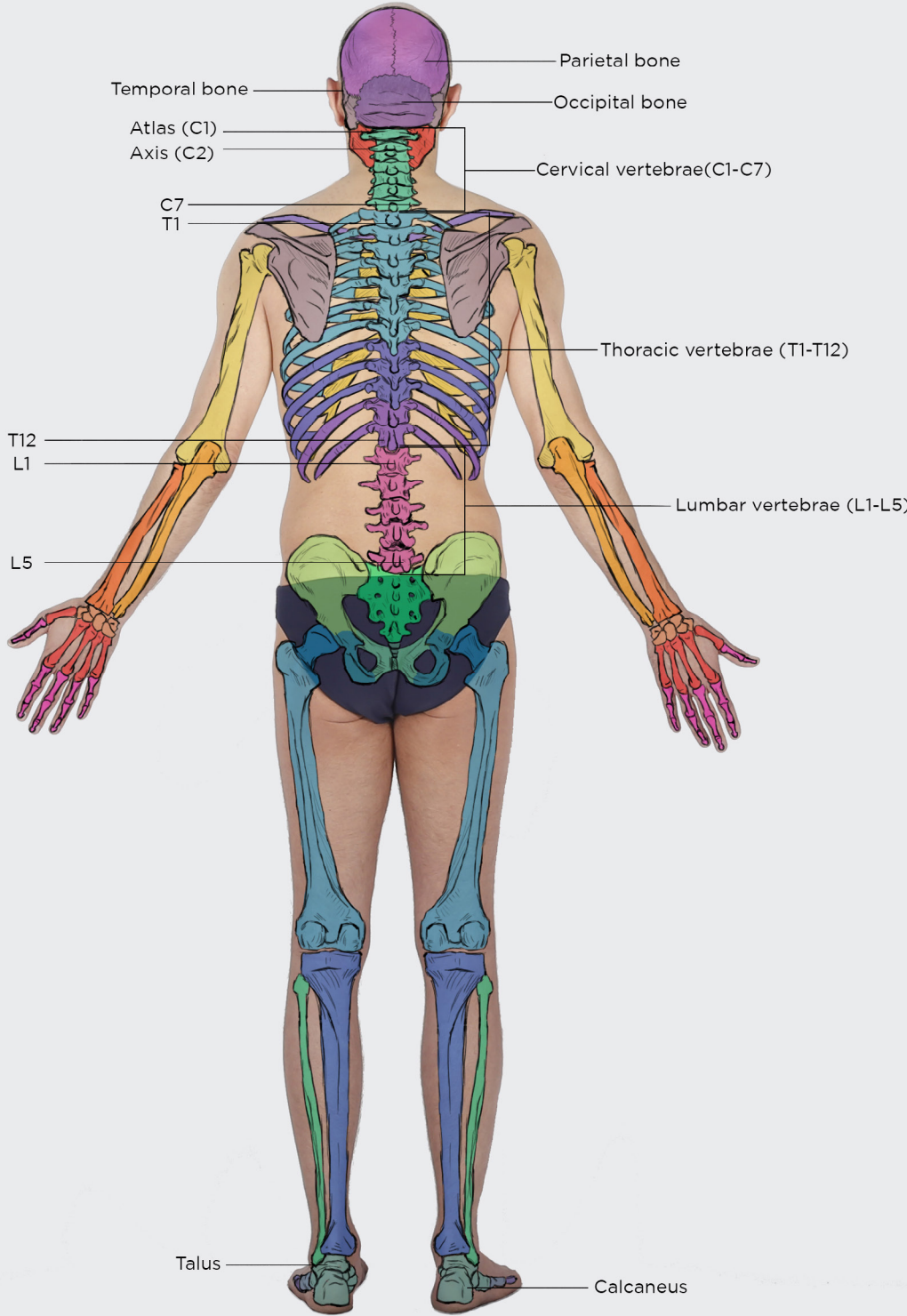
At birth, the skeleton consists of 300 or so bones. By the time we hit adulthood, many bones have fused together, such as those of the sternum and the cranium, taking that total down to around 206.

For us, we need only focus on the bones that are visible on the surface of the skin, or the so-called "bony landmarks." These landmarks, regardless of a person's physical attributes, are pretty uniform from one person to another, and are so prominent that they can often be detected through clothes.



03a

03a  
The skeleton from the anterior aspect



03b

03b  
The skeleton from the posterior aspect



04 The axial and appendicular skeleton

Before we take a closer look at the bony landmarks, however, let's divide the skeleton into two major structures: the axial skeleton and the appendicular skeleton.

The axial skeleton consists of 80 bones, and for simplicity, let's go ahead and categorize them into three main groups:

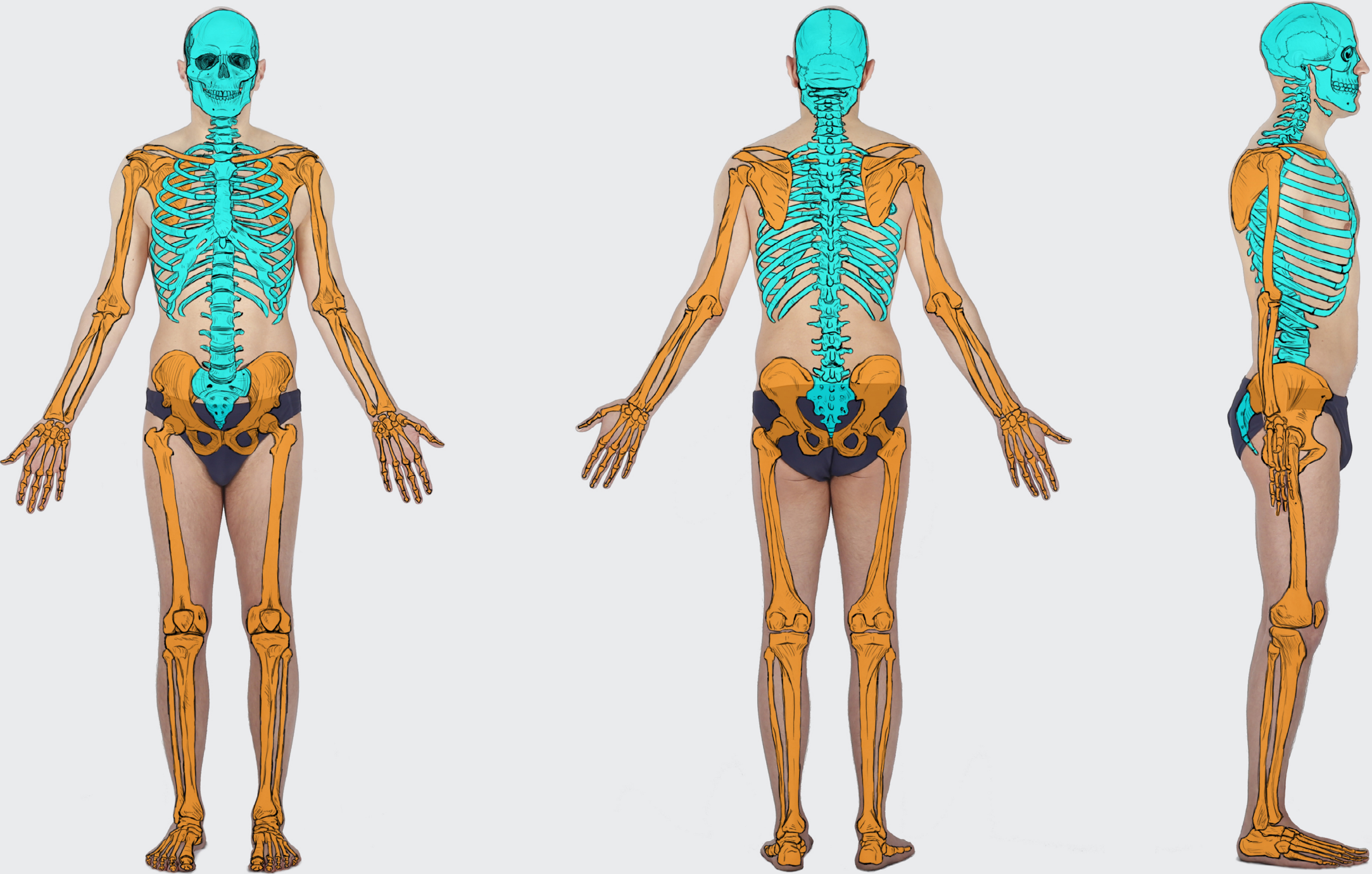
- the skull (cranial, facial, and auditory bones)
- the vertebral column (the spine – vertebrae, sacrum, and coccyx)
- the thoracic cage (ribs and sternum)

The appendicular skeleton consists of 126 bones, and again for simplicity, let's categorize them into four main groups:

- the shoulder girdle (clavicles and scapulae)
- the pelvic girdle (pelvis)
- the upper extremity (arms – humerus, ulna, radius, carpals, metacarpals, and phalanges)
- the lower extremity (legs – femur, patella, fibula, tibia, tarsals, metatarsals, and phalanges)

04

Dividing the skeleton into two major structures: the axial and the appendicular



 Axial skeleton  Appendicular skeleton

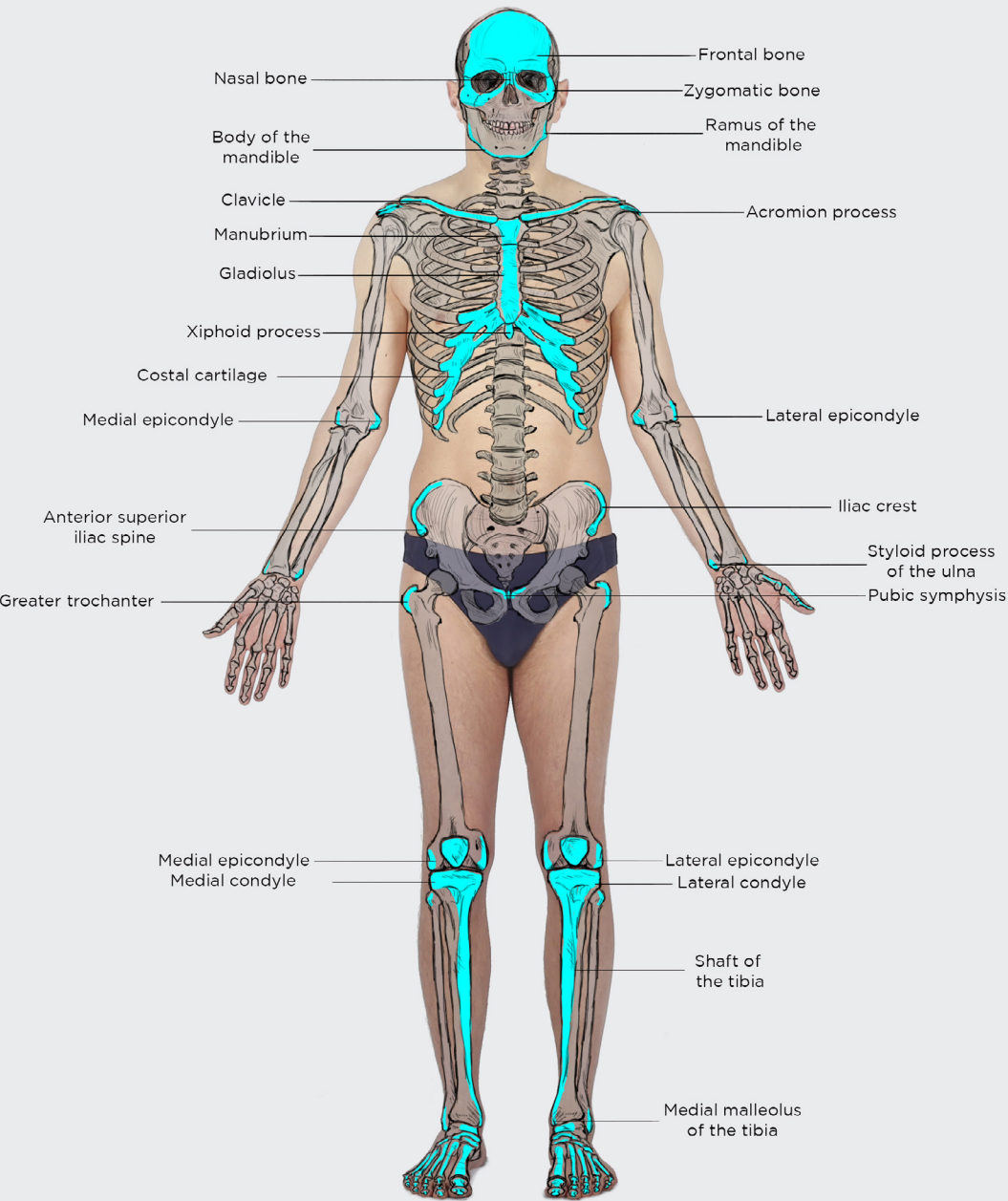
05 Axial bony landmarks

Let’s start with the landmarks of the axial skeleton, beginning at the skull and working our way down the vertebral column.

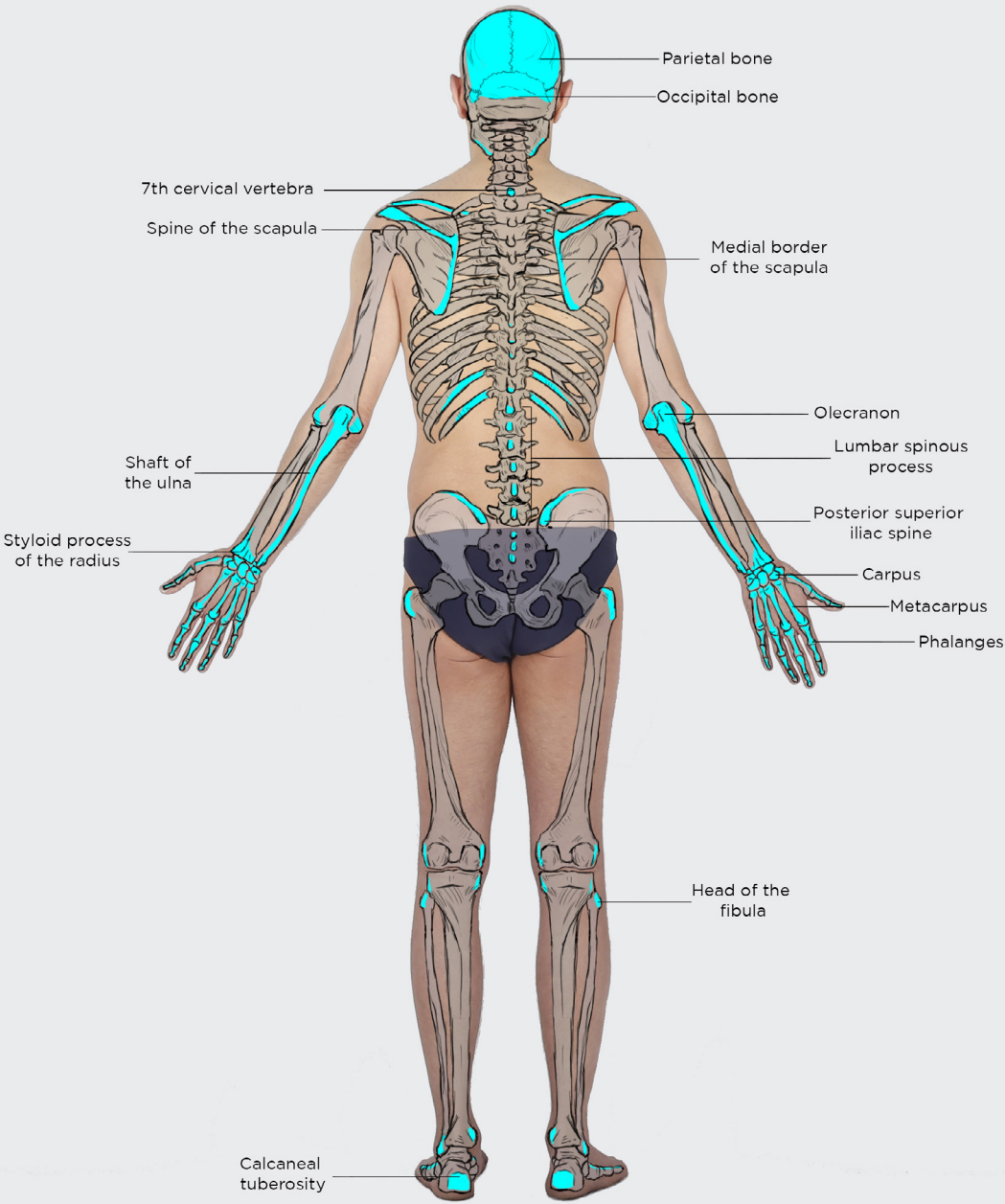
- **Skull:** The main bones that affect the surface of the skin are the frontal bone, parietal bones, occipital bone, zygomatic bones, and the body of the mandible. Place your fingers against your forehead or cheek and you’ll be able to feel the structures of the frontal and zygomatic bones.
- **“C7”:** The seventh cervical vertebra (C7) sits close to the skin, creating a very visible landmark. Bring your chin towards the pit of your neck and place your hand at the back of your neck, and you should be able to easily feel this landmark.
- **Sternum:** In adults, the sternum (breastbone) is composed of three fused bones: the manubrium (handle), gladiolus (blade) and xiphoid process (sword). Just above the manubrium, we have the suprasternal notch, a large visible dip at the base of the neck. The xiphoid process has little influence on the surface, but it can be sometimes notable in young children.
- **Ribs:** The true ribs (1 to 7), attach via the costal cartilage directly to the sternum, while the cartilage of the false ribs (8, 9 and 10) each attaches to the cartilage of the rib above. The inferior rim of the costal cartilage creates the costal arch, which is what we want to pay attention to. In males the costal arch forms an angle of 90°, while in the female it is closer to 60°. The floating ribs (11 and 12) have no cartilage and do not meet the sternum, but are sometimes revealed as the trunk moves.
- **Sacral triangle:** The sacral triangle is created by the sacrum, which is wedged between the iliac bones of the hip. The posterior superior iliac spines create two indentations (the “dimples of Venus”) lateral to the midsagittal plane, forming the sacral triangle in the lower back (see the image for Step 06).

05a: Bony landmarks of the skeleton from the anterior aspect

05b: Bony landmarks of the skeleton from the posterior aspect

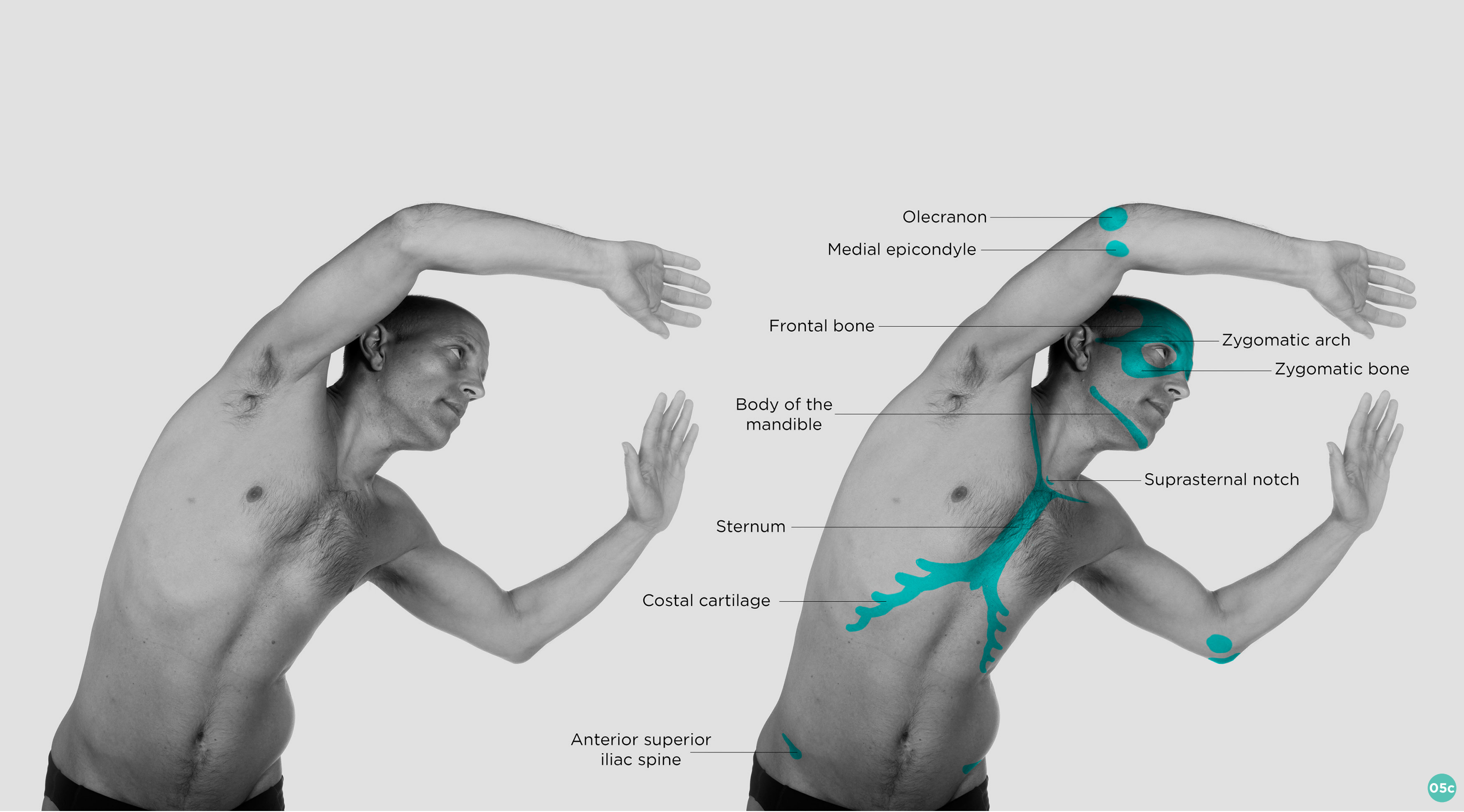


05a

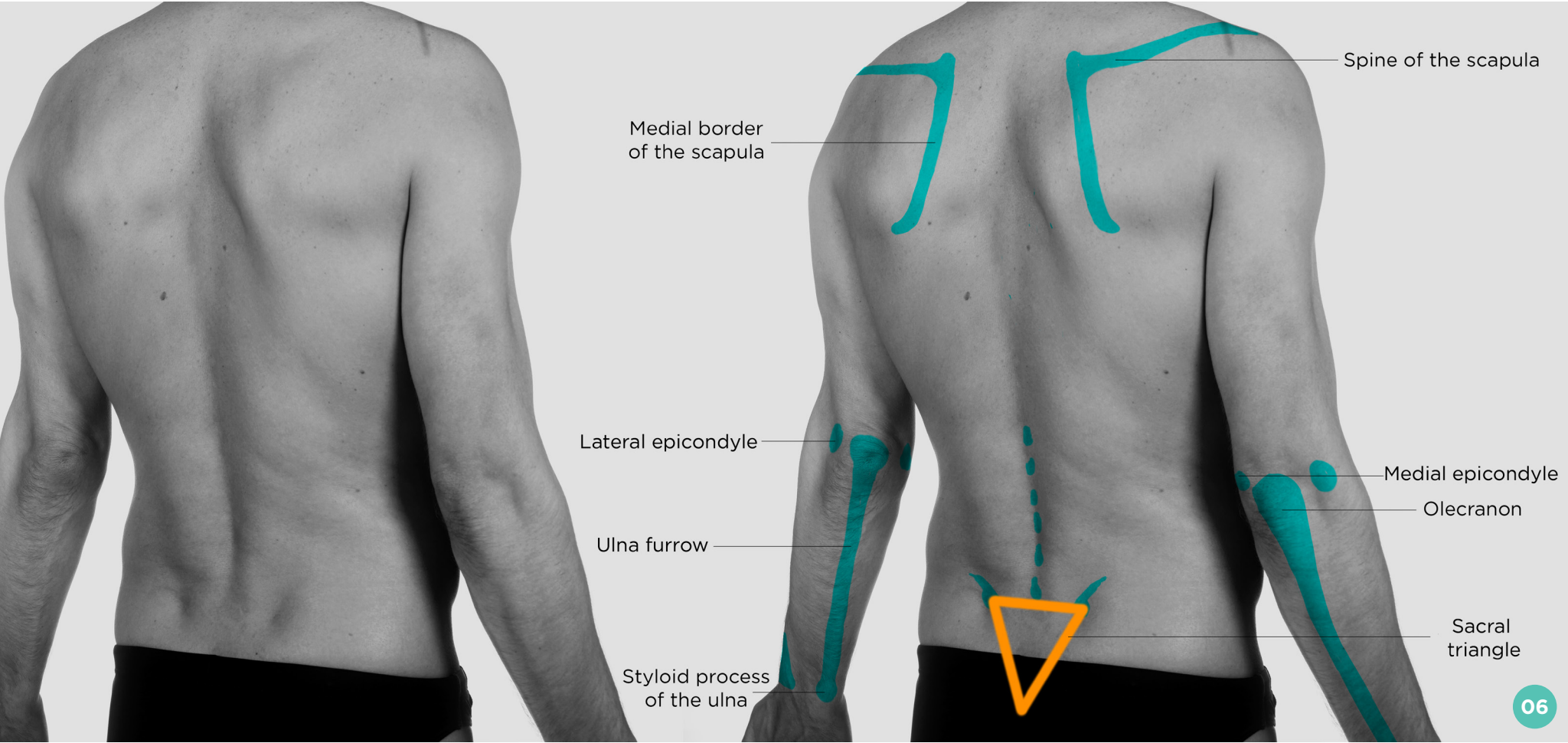


05b





05c: Exposing some of the landmarks of the cranium, the mandible and the anterior aspect of the torso



Upper appendicular bony landmarks

Now we'll move on to the landmarks of the appendicular skeleton and look firstly at the upper extremity.

- **Clavicle:** The clavicle (collarbone) is the only link between the upper extremity and the axial skeleton. It is easily seen and felt under the skin, especially on those with less fat, and connects to the acromion process of the scapula. The acromion process forms the highest point of the shoulder and is most noticeable when the arm is raised because a depression is created.
- **Scapula:** Moving to the posterior aspect, we follow the spine of the scapula, which meets the medial border of the scapula.

Both the spine and medial border of the scapula are of great significance when considering the attachment of the muscles of the scapula and back.

- **Elbow:** Between the medial and lateral epicondyles, the olecranon of the ulna (the elbow) is very prominent. Examine your own elbow and take notice of the line created when your arm is extended, and the triangle created during flexion.
- **Forearm:** The shaft of the ulna helps to break up the flexor from the extensor muscles of the forearm. At the distal end of the ulna is the styloid process of the ulna, which you can easily feel as you press against the pinky side of your wrist. On the thumb side of the wrist, you have the styloid process of the radius.

- **Hands:** Our final points of consideration in the upper extremity are the hands and the fingers: the carpals, metacarpals, and phalanges. We are primarily interested in the dorsum of the hand, where we can see and feel the protrusions of the bones affecting the surface of the skin. The distal ends of the metacarpals are spherical, creating small knuckles, as are the distal ends of the proximal and medial phalanges.

Lower appendicular bony landmarks

Let's move on to the landmarks of the lower extremity, starting with the pelvic girdle.

- **ASIS:** The anterior superior iliac spine (ASIS) is a bony protrusion that sits in the anterior end of the iliac crest and can be

used to divide the upper body from the lower body. A triangle can be formed at the front of the pelvis by creating a line that runs from ASIS to ASIS and down to the pubic symphysis.

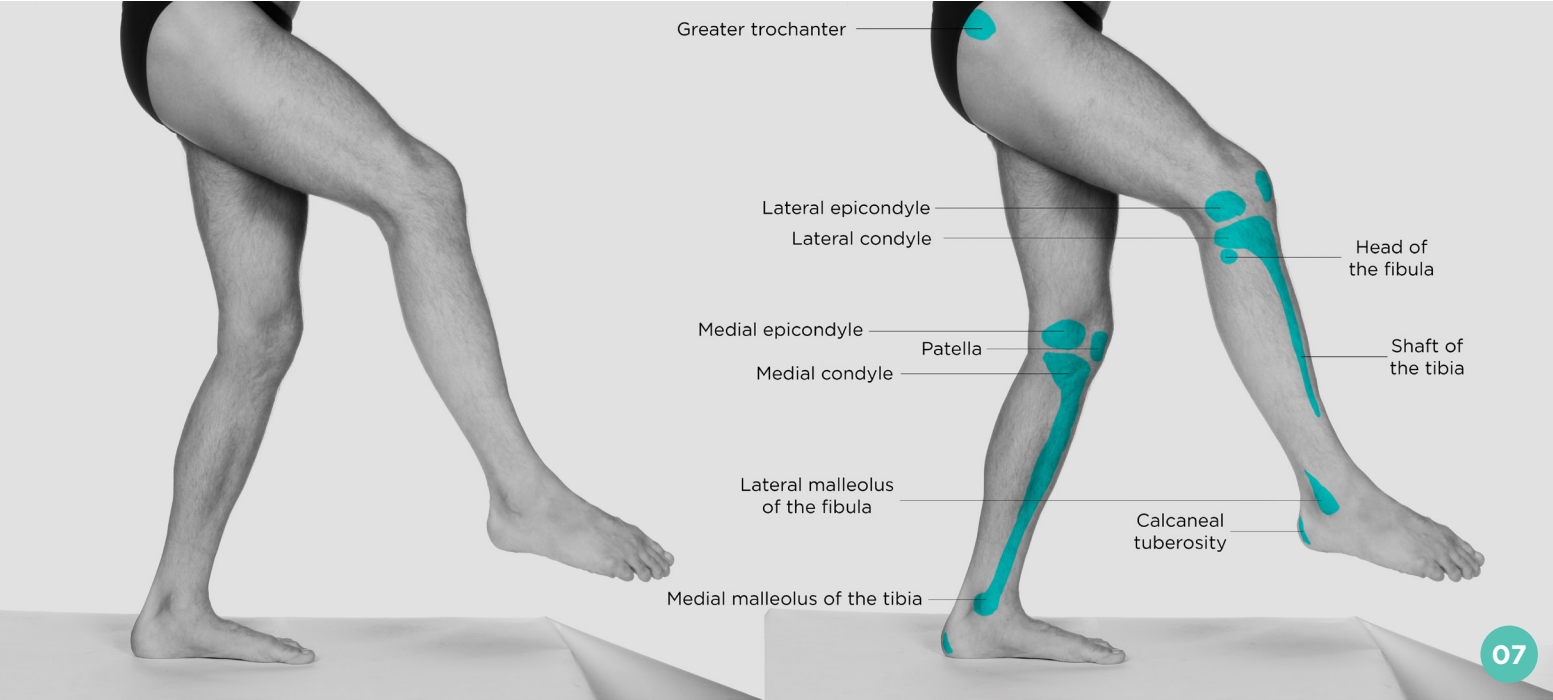
- **Femur:** We now come to the longest bone in the human body: the femur. On the superior lateral end of the femur, we have the greater trochanter, which affects the surface on the lateral side of the hip and can be easily spotted depending on the articulation of the leg. If you place your fingers against the lateral side of your hip, it can almost always be felt.
- **Knee:** At the distal portion of the femur, we come to the medial and lateral epicondyles and the patella (kneecap). These create plenty of surface change that is of interest. In the straightened leg, for example, notice the two dimples either side of the patella.
- **Lower leg:** The tibia (shinbone) and fibula are the second and third largest bones in the body. The tibia's superior extremity creates two bony landmarks on either

side of the knee: the medial and lateral condyles. A sharp ridge can be felt on the anterior side of the tibia, known as the crest of the tibia, which can easily be felt under the skin. On the distal end of the tibia is the very prominent medial malleolus (inner ankle bone).

- **Feet:** The foot and the toes display similar patterns to the hands and fingers. There are three portions of interest: tarsals, metatarsals, and phalanges. The calcaneus (heel) is the largest, most prominent tarsal. The metatarsals and phalanges of the toes are most noticeable on the dorsum of the foot, while the underside (palmar) of the foot is cushioned for shock absorption.

06  
Some of the landmarks of the upper extremity and the sacral triangle

07  
The landmarks of the lower extremity



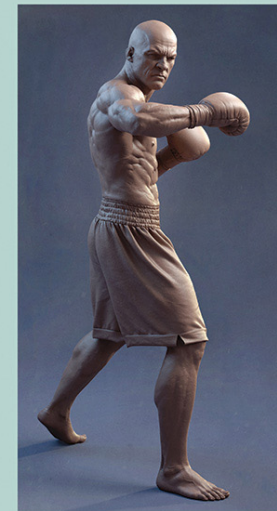


# ANATOMY FOR 3D ARTISTS

THE ESSENTIAL GUIDE FOR CG PROFESSIONALS



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**ANATOMY** FOR 3D ARTISTS  
THE ESSENTIAL GUIDE FOR CG PROFESSIONALS



*Anatomy for 3D Artists* is an essential teaching guide for sculpting human anatomy. Non-software specific, it is packed with everything that today's 3D artist needs to know in order to tackle the difficult task of recreating the human form in 3D. Starting with the use of 2D references, and moving on to practical and advanced 3D sculpting – including topology – the book covers every stage in the creation of all kinds of male and female figures. Featuring established artists such as Chris Legaspi and Mario Anger, *Anatomy for 3D Artists* also includes several master projects for an informative and in-depth overview of the 3D sculpting process of various forms, showing how the archetypal human form can be adapted to fit any character shape!

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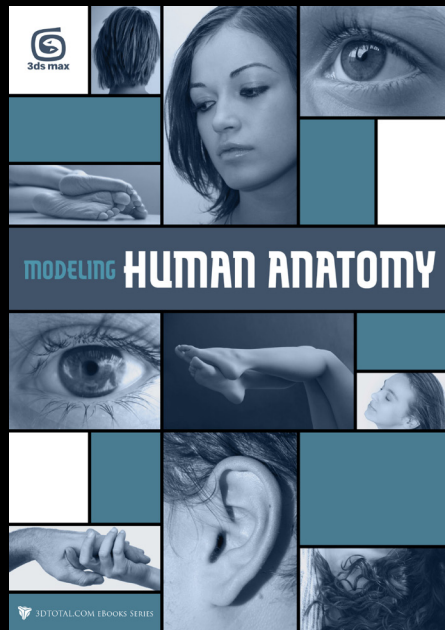


# Modeling hands in 3ds Max

By Jose Lazaro

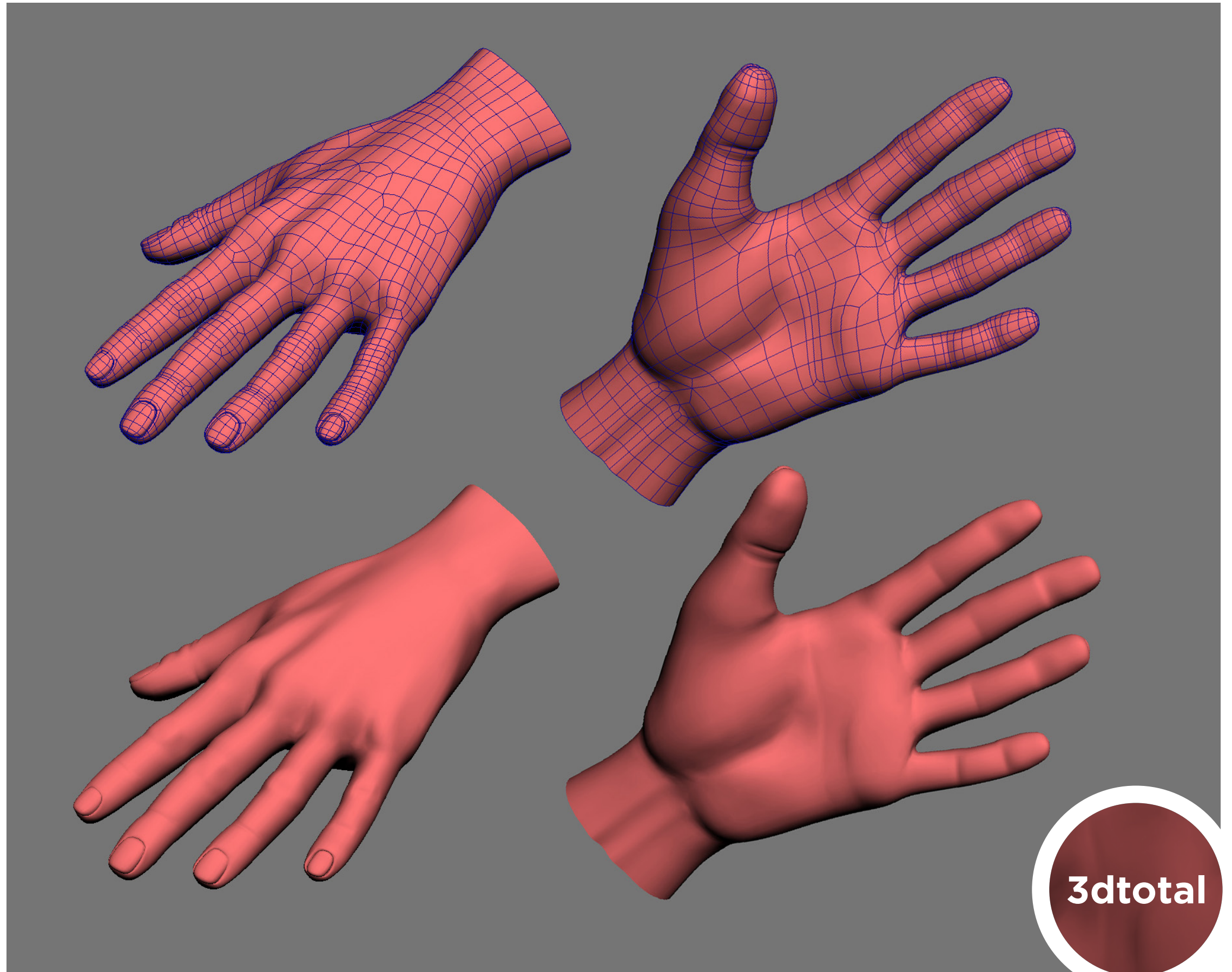
Web: [josemlazaro.com](http://josemlazaro.com)

Featured in:



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We should take care when modeling hands because it is very easy to make mistakes. The repetition of the fingers and poor quality references can be confusing. As you can see from 01, it is best to have good references as I do and at least two of them, one of the top of the hand and one from the palm side.

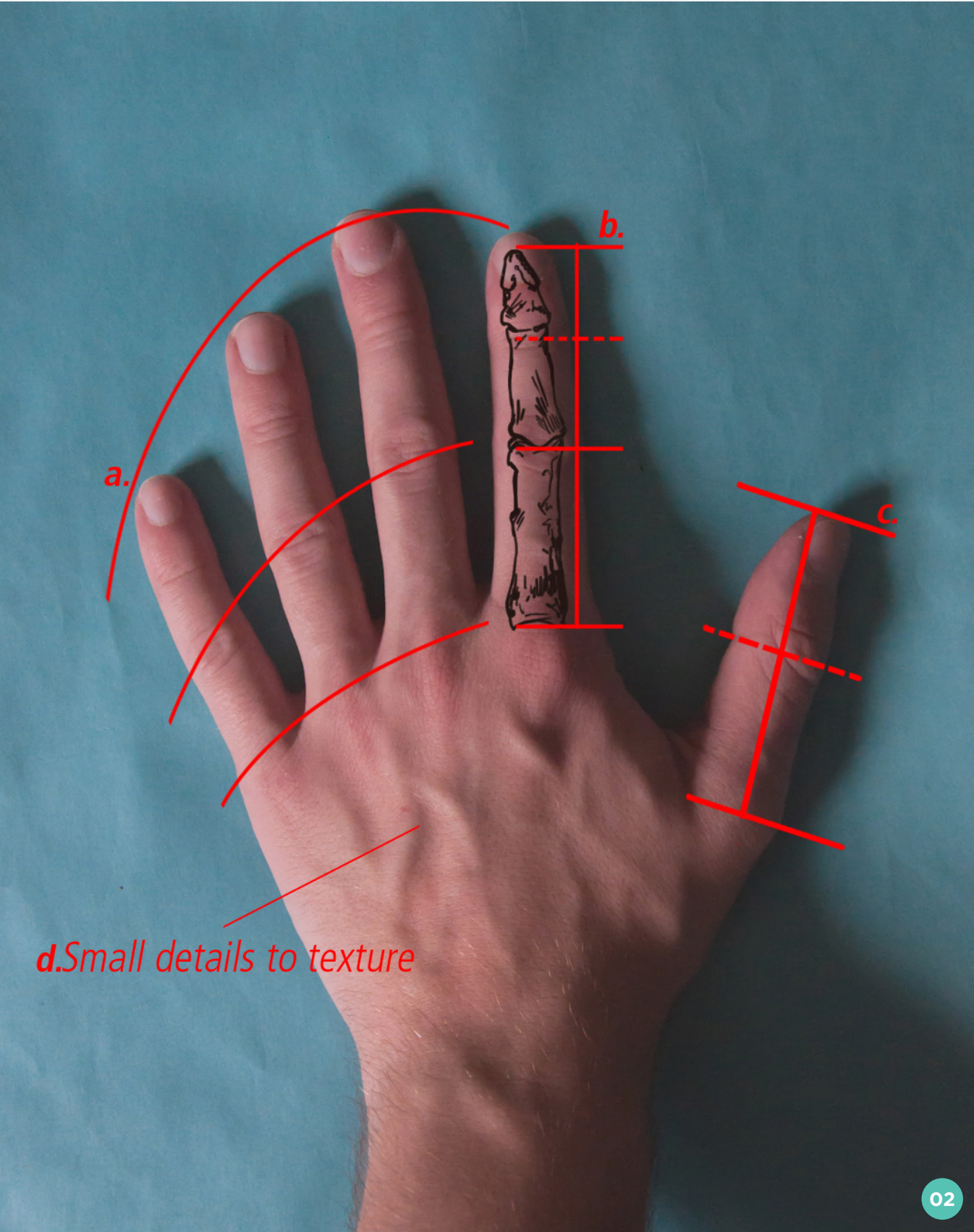
I would recommend that you always take into consideration that athletic men usually have short, thick fingers and women have long, thin fingers. It's a rule you can apply to make your hands look credible, but as you know rules can be broken.

In fact my hands break this rule. My fingers are large and thin but that's because I have a basketball player's hands! Ask your friends to show you their hands, it's a good exercise

to compare the diverse types of hand, but don't forget to tell them it's for reference!

**Construction**

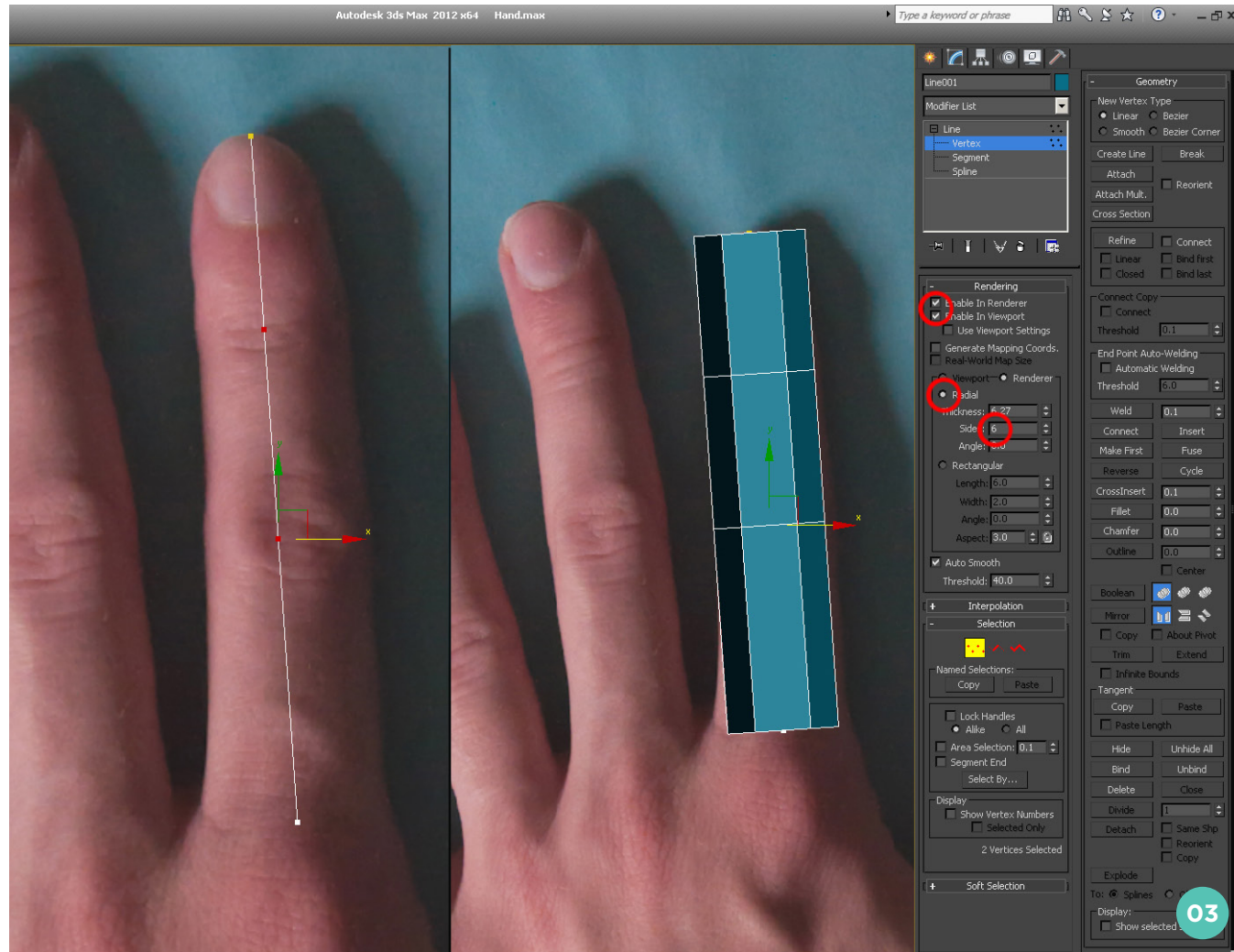
Keep in mind the arc that is created when the fingers are open. This will give you a much clearer idea of the proportion and distance there should be between the phalanxes of each finger (02a). Another important point is the size of the phalanges. The second and third phalanx of the fingers is the same length as the first joint. When the fingers are bent at the first joint they are bent in half. If your hand is going to be animated, the riggers will appreciate you taking things like this into account (02b). The thumb only has two phalanges (02c). Small details, such as veins and wrinkles on the palm, can be solved perfectly by texture (02d).



01  
Work with  
good reference

02  
Defining elements  
of the hand





## Modeling

Put your image in the front viewport to model it. Start by using Splines to create the fingers as cylinders, and add a strategic vertex in each section line and also add active renderable parameters so you can see the Spline as a cylinder. An important thing to change is the default number of sides to the cylinder, changing 12 to 6. I work with a basic mesh to make it easier to model quickly, then later you can add a subdivision level and collapse the model (03).

The next step is to convert the model into an editable polygon and begin to make a more defined first version of our index finger. This finger is then copied to the other fingers. Add a few loops in the area of articulation, one to

define the nail and one at the center of each phalanx. With the Freeform Shift tool you can now change the shape easily, both in top view and side view (04).

Continue to add detail to better define the shape, making sure you use your references. Insert the nail. Remember that the finger will subdivide further later and this will change and smooth the shape of the fingers, so at the moment we are just trying to create the shape of the finger using the reference (05).

**Tip:** Learn to use the keyboard shortcuts to change the size and strength of the brush, and to shift the parameters. Left mouse button + Ctrl is Falloff. Shift + left mouse button is Strength.

### 03

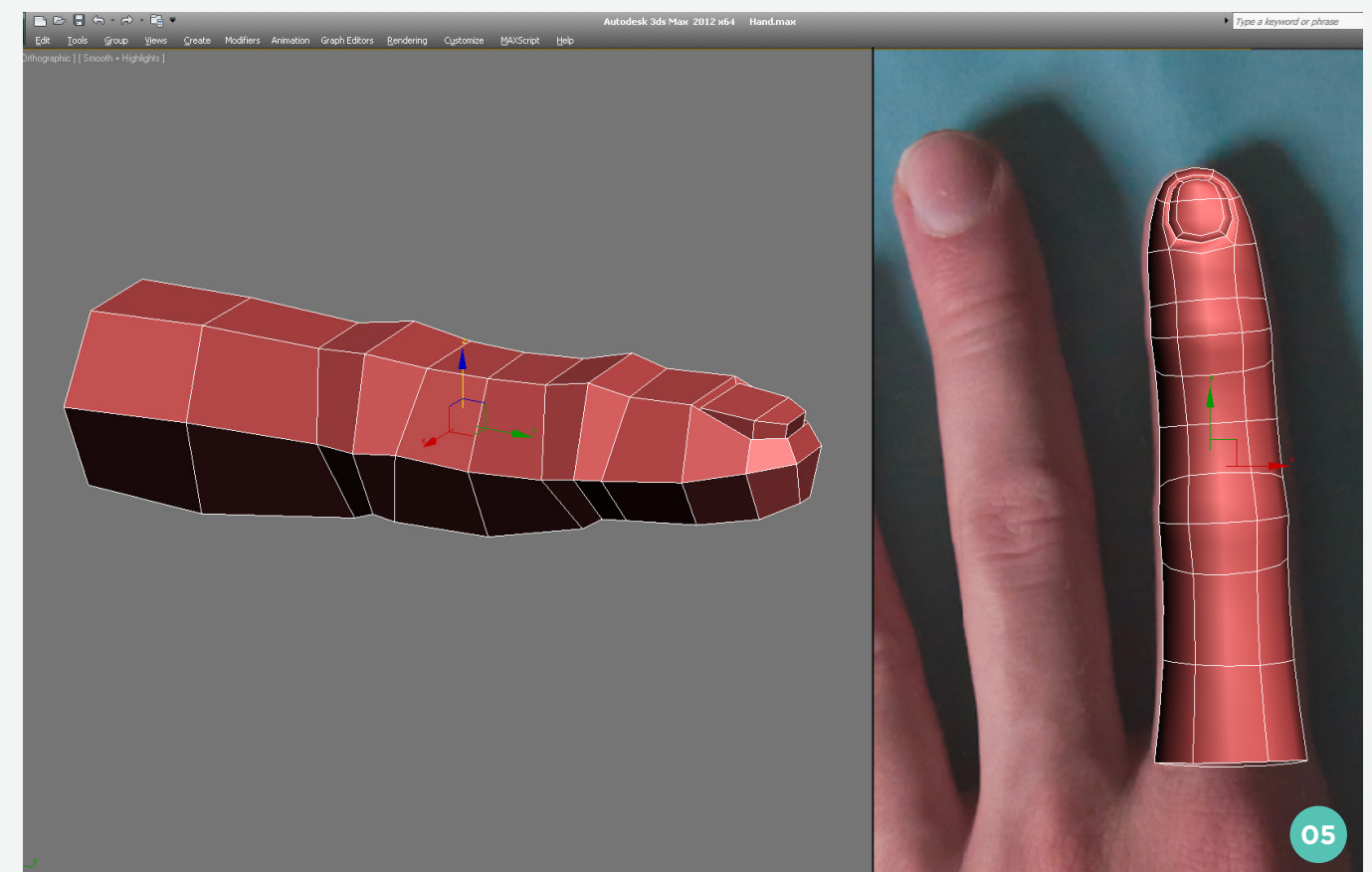
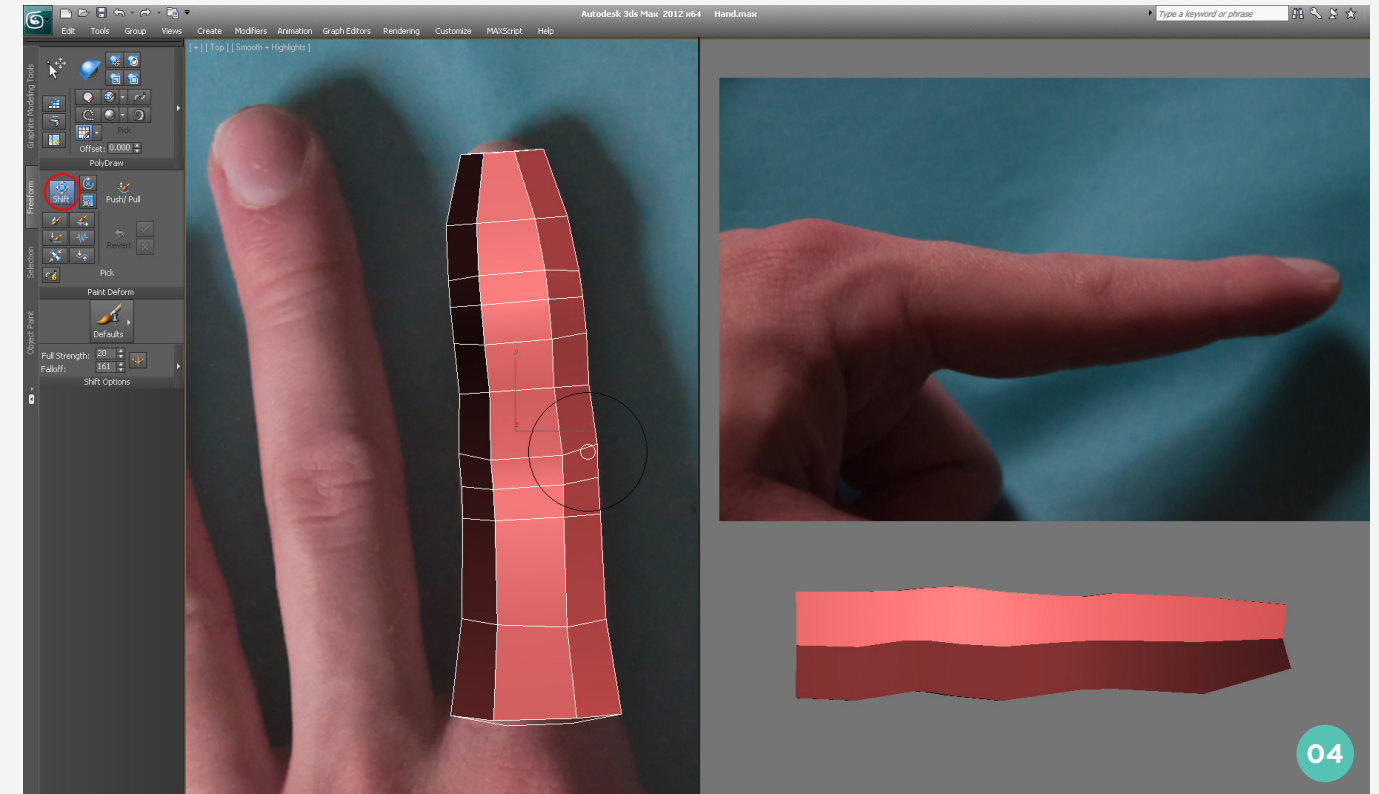
Beginning to  
model the fingers  
with Splines

## 04

### Converting the model to an editable poly

## 05

### Adding details like fingernails



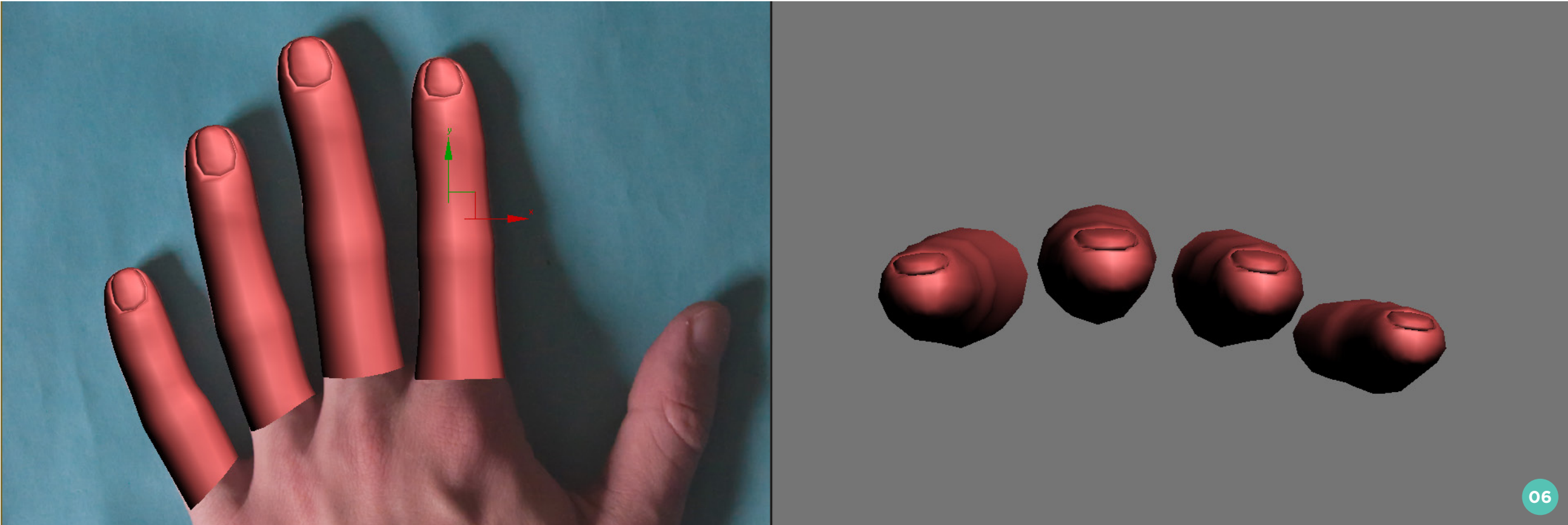


The next step is to clone the finger and adjust each one of them to match the reference. Also create the arc of the hand that I mentioned earlier (06).

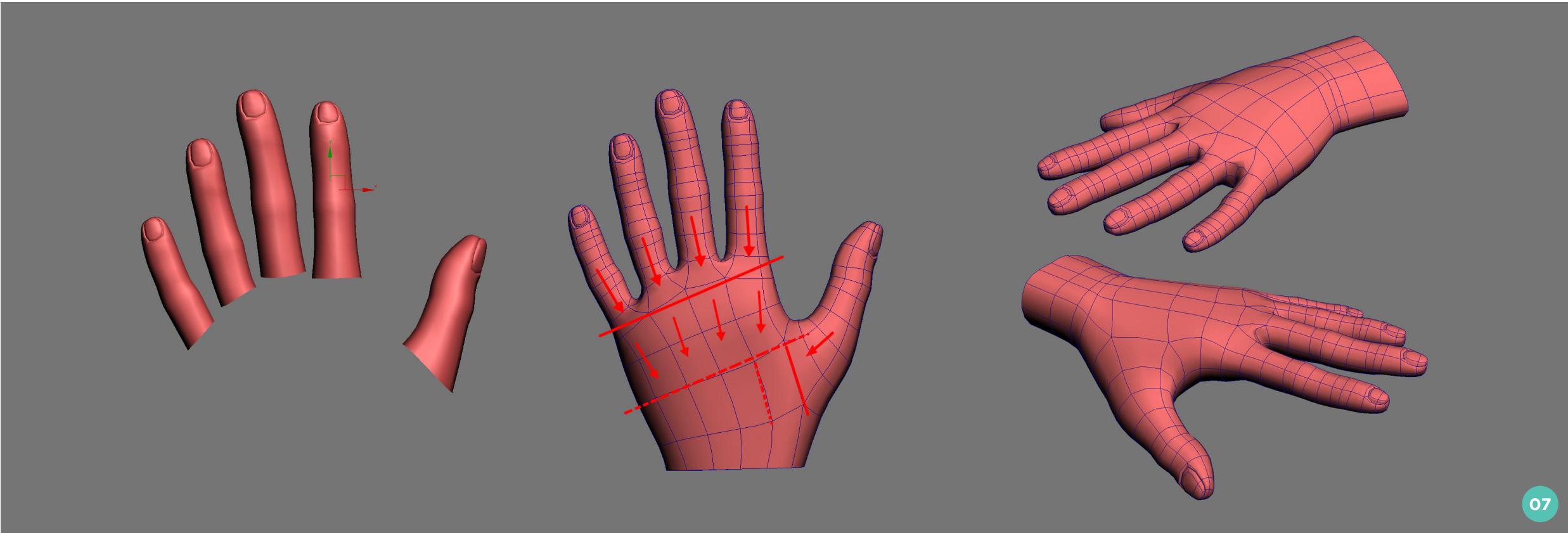
You can use the same technique to add the thumb. You will need to change the mesh a lot because the shape of the thumb is so different to the other fingers, mainly because there are only two phalanges but also because it is shorter and fatter.

The next stage is to add a box for the palm. As you can see in the wireframe in 07, I've tried to maintain a regular flow between the finger mesh and the hand mesh. Keeping the flow of the mesh helps to keep things clean.

Continue to adjust the hand, remembering to look at it from as many different angles as you can. Use your hand as the reference when modeling any viewpoint not in your reference.



06  
Cloning and  
adjusting the  
fingers to fit



07  
Modeling the rest  
of the hand

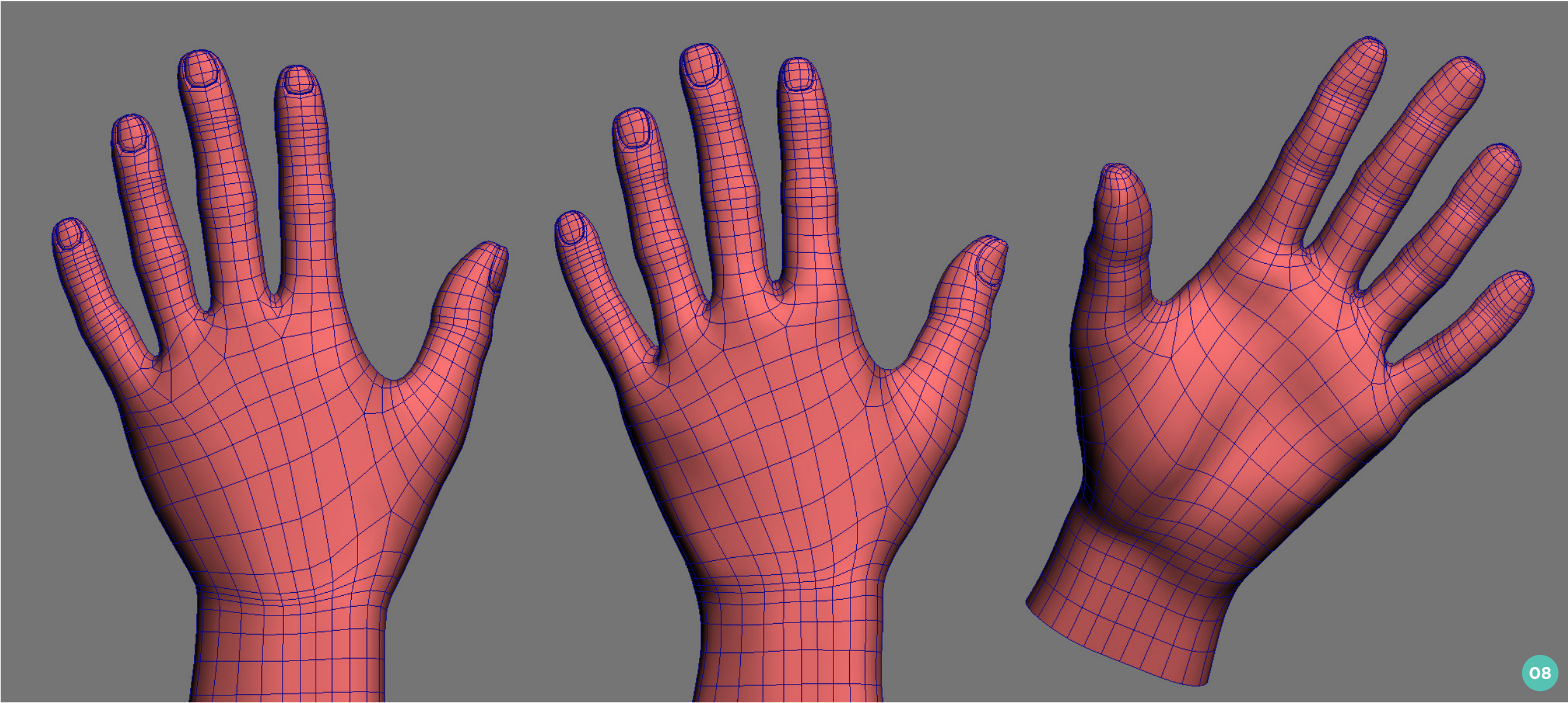


Detail

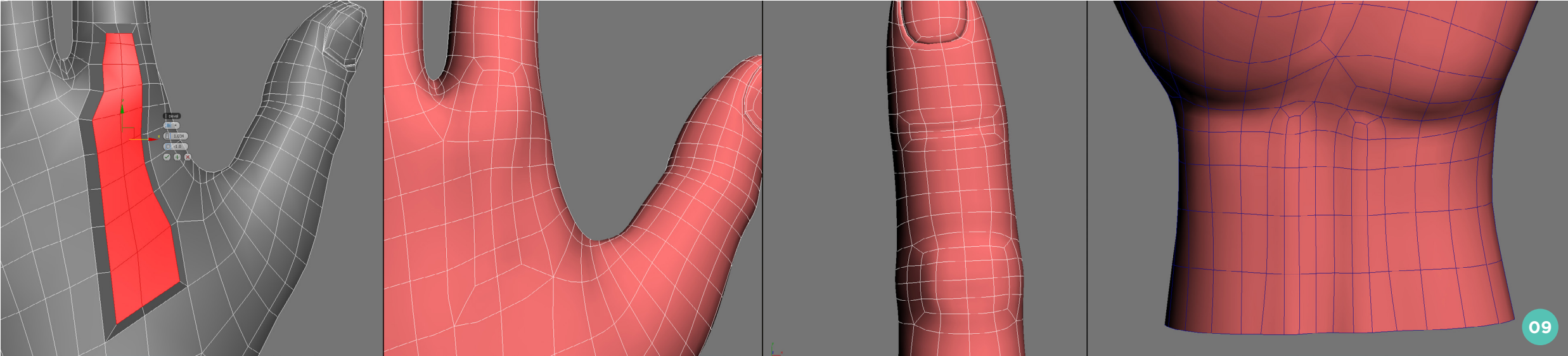
By now you should have created the first version of your basic hand, just without much detail. By having less geometry we've worked quickly and kept close to our reference without any problems. The next step is to go a little further and add the detail that makes our model more interesting.

Now we can add more detail and collapse the model. We will use the Freeform tools because having more geometry means we can break and define the contour more easily. Notice how I have improved the shape of the nails in general, especially on the thumb (08). I've also improved the palm bulges. Now they look much smoother and better built. To do this I've used the Freeform tools again (I admit it, I love them – especially tools like Push/Pull or Relax/Soften).

After improving the general form, add more detail such as the tendons from the Palmaris Longus muscle and refine the knuckles. To do that select the area you want to extrude and bevel, then adjust them manually. I've also used a cut to create a wrinkle. They are not really necessary because we can put those in the texture, but it can help if the hand is going to be animated (09).



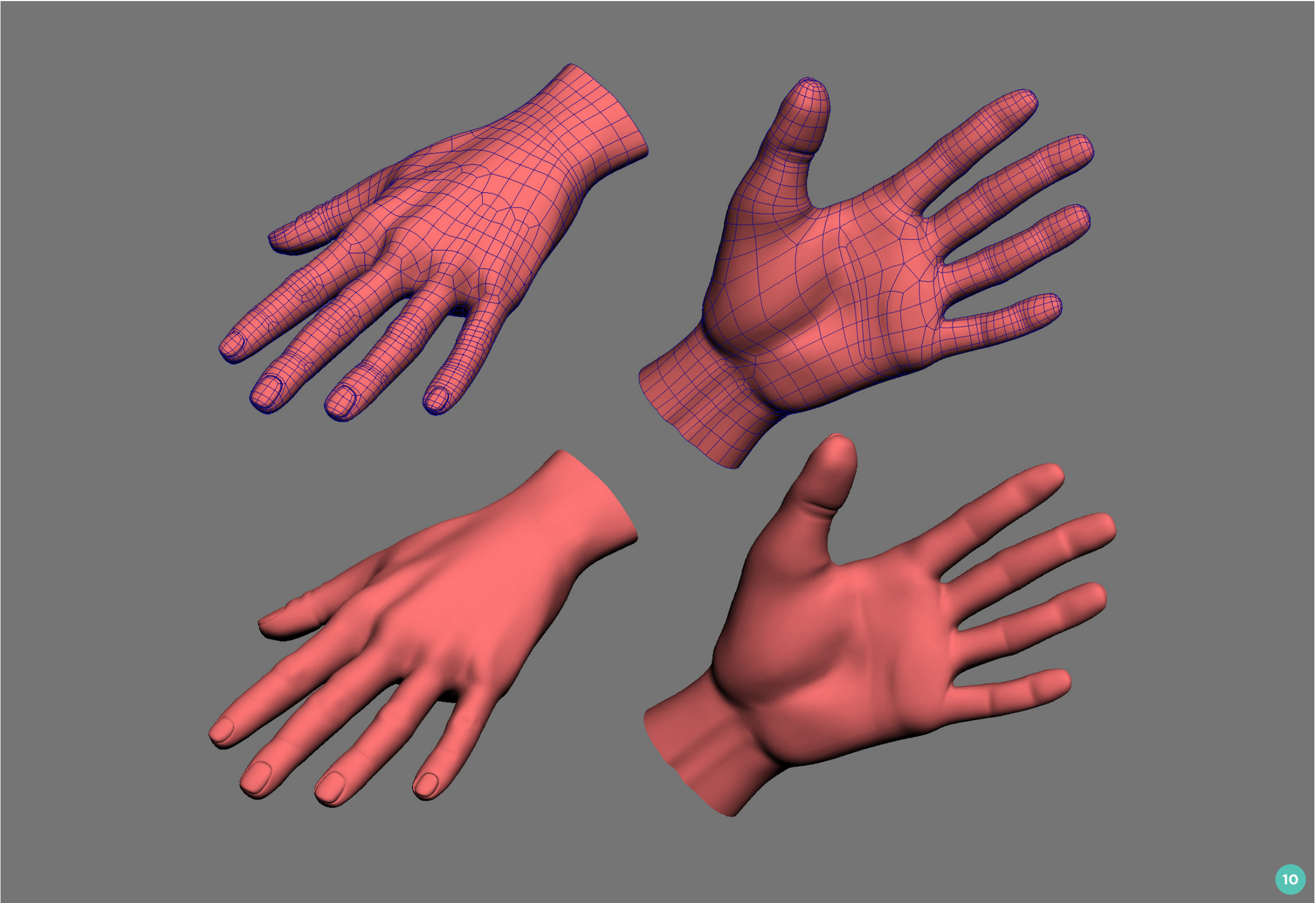
08  
Adding greater detail to the hand



09  
Adding wrinkles and tendons



Finally, after an intensive modeling process, you should have something that you are happy with. This can be the point where you clean your model, particularly on the fingers. I added some small details like the end of the Ulna bone in the wrist which can be visible from the surface. All of these little details will make your model look less flat and lifeless, and will make it look like more than just a piece of geometry (10).



10  
The hands detailed  
and ready for texture





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# Best of the 3dtotal Gallery

## Featured artists:

Thiago Peyon

Tamas Medve

Igor Kulkov

Michael Santin

Vincent Chai

Sergio Raposo Fernandez

Andrej Otepka



### I Haz Bunnies

By Thiago Peyon

Web: [artstation.com/tpeyon](https://artstation.com/tpeyon)

I love this cartoon image because I think it's just so cute and it just makes me smile. Also, there is some great shading and lighting technique and all the textures are just right, making this image another one of my favorites.

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## Blockade #6

By Tamas Medve

Web: [facebook.com/M3dve-563791784008616](https://facebook.com/M3dve-563791784008616)

With echoes of *Blade Runner* and an aesthetic which reminds me of one of my own personal projects, I had to pick this one. Tamas's sci-fi cities always present something a little different, and I like the mystery present here of those distant buildings.







**Posts & Souvenirs**

By Igor Kulkov | Web: [igorkulkov.com](http://igorkulkov.com)

I'm a sucker for detailed environments, especially ones with an atmosphere. Sometimes you don't need people in an image to be able to tell a story. Here you have subtle asset placement and aged textures - you can just imagine your grizzled game character breaking in to explore.





**Snake - Danger Noodles**

Left

By [Michael Santin](#)

Web: [artstation.com/artist/msantin](http://artstation.com/artist/msantin)

I love cute cartoon images and I love ramen so when I saw this I just had to include it. It's bright, colorful and all the textures are spot on, though it is making me crave ramen.

**Male Strap**

Above

By [Vincent Chai](#)

Web: [artstation.com/vincentch20](http://artstation.com/vincentch20)

The anatomy modeling here by Vincent is top notch - the tension across those shoulders palpable. The colors and lighting also highlight the details really nicely,





*Sergio Raposo Fernández*

**Cartoon Spain**

By Sergio Raposo Fernandez

Web: [artstation.com/sergioraposo](http://artstation.com/sergioraposo)

What I think makes this artwork great is that without even looking at the title, I could tell it was a depiction of Spain. The bright colors and great textures make this a really fun image and one of my favorites.





Waghdas Journey - City

By Andrej Otepka

Web: [andrejotepka.com](http://andrejotepka.com)

Love how there's a story being told in this scene; some of the assets are typically cyberpunk (the satellite dishes, advertising, military, the cramped living conditions) but there's also hope with the non-typical color scheme and of course, the escape front and center.



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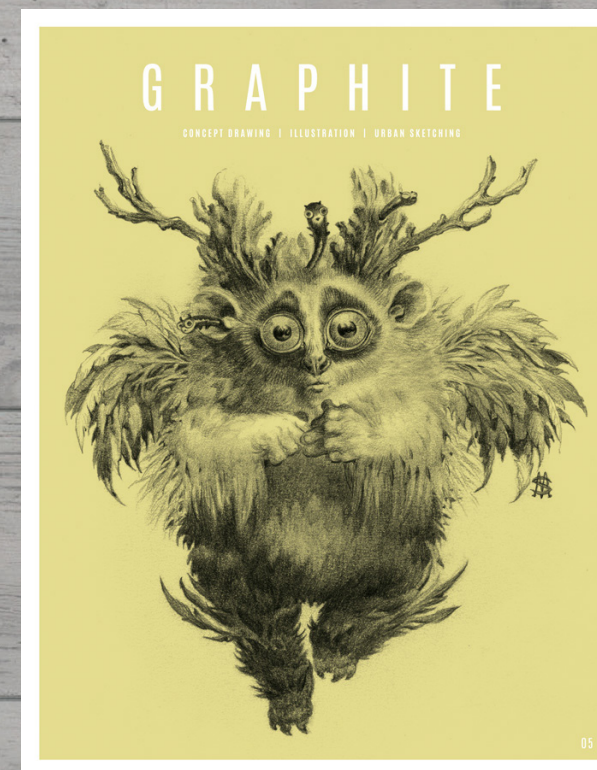
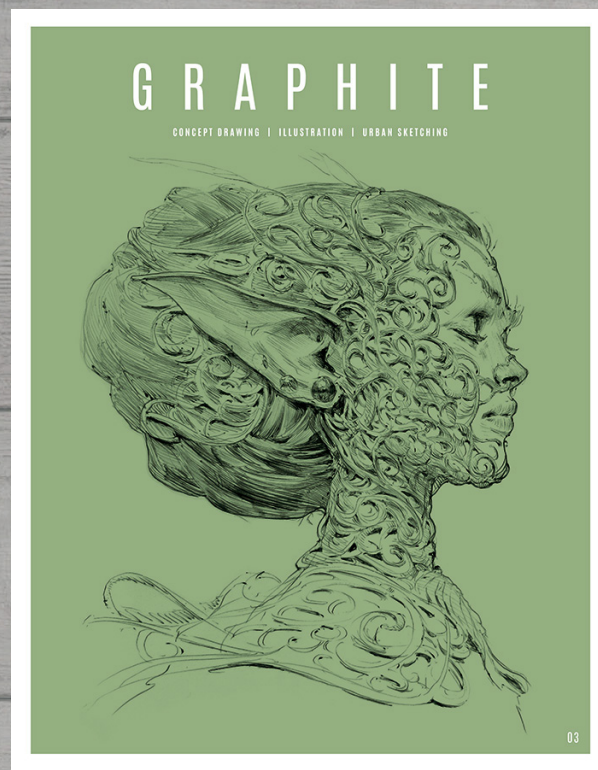
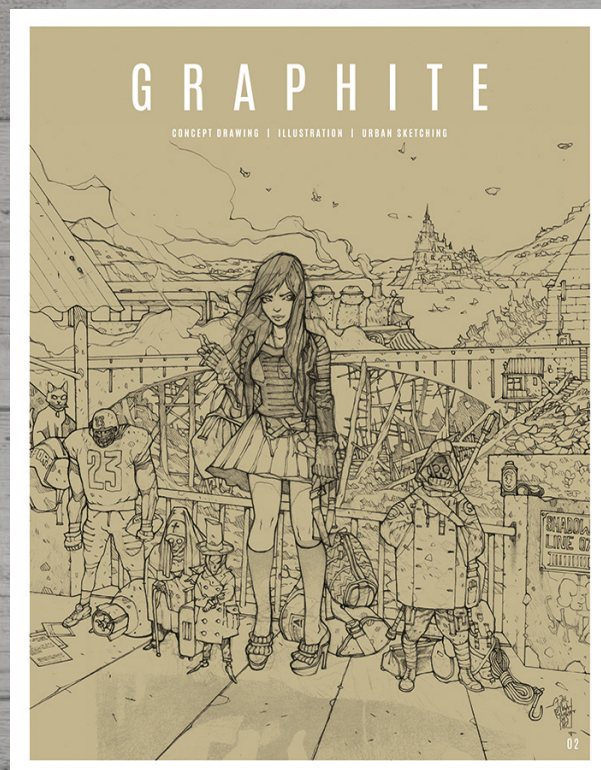
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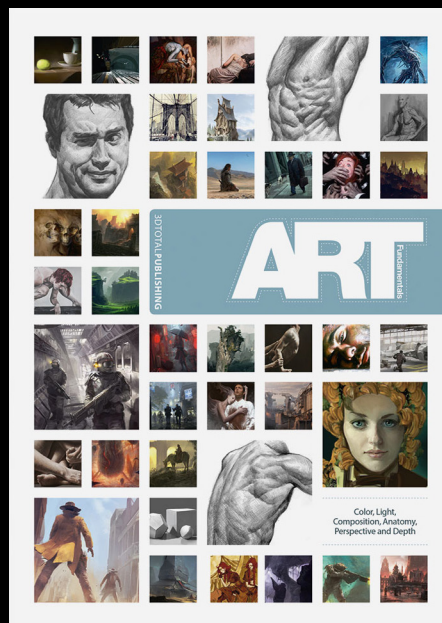


# Poses

By Matt Smith

Web: [mattksmith.com](http://mattksmith.com)

## Featured in:



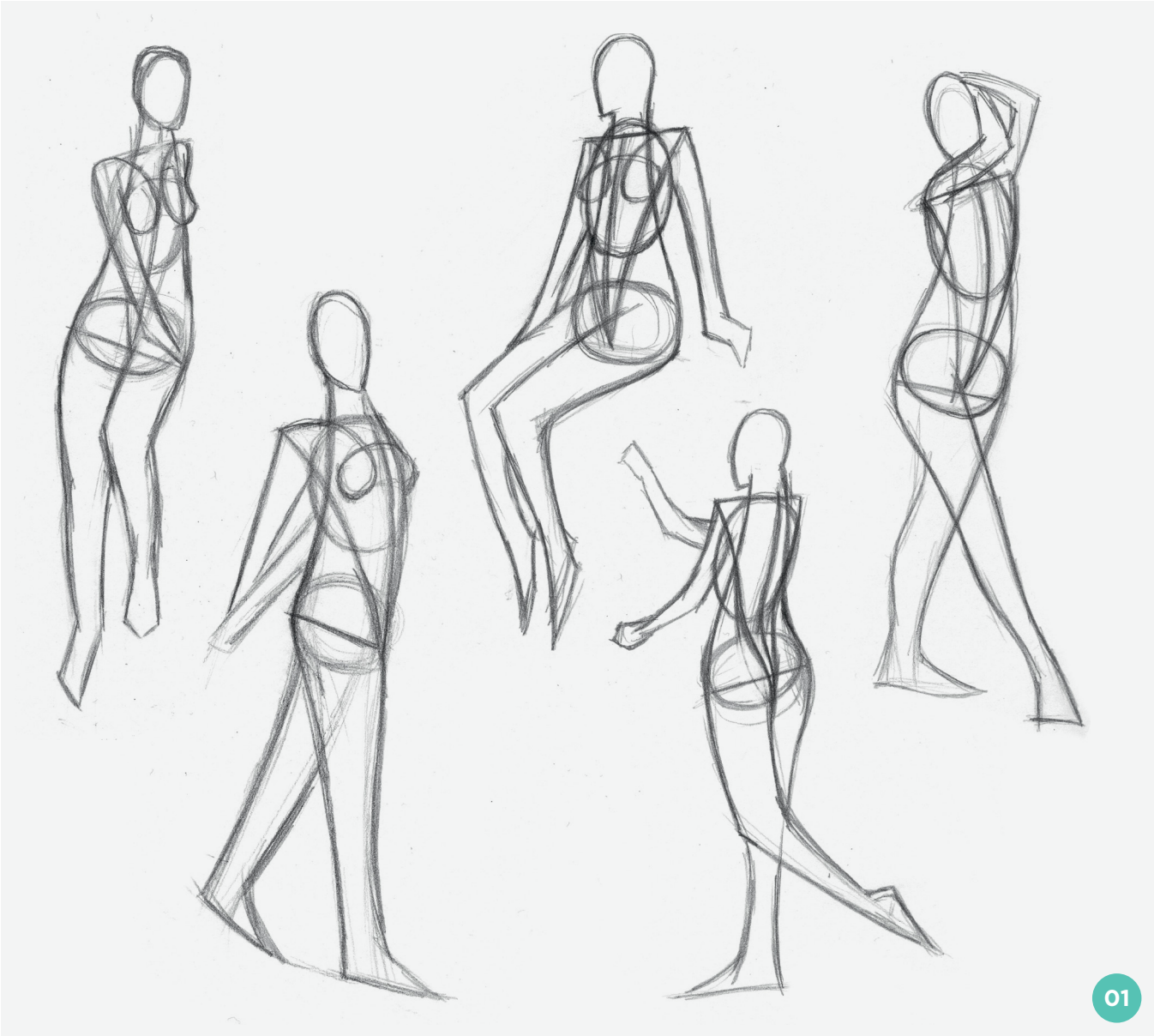
## Art Fundamentals

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This section in the chapter will focus on how to correctly proportion and render individual muscles in a full figure pose. When it comes to drawing full figure poses there are many ways to go about doing it.

Some people like to start with a simple stick-figure skeleton frame; others may start by massing out the large forms of the body. While these are both good ways to go about drawing figures, I am going to talk about and

demonstrate the Reilly Abstraction, created by Frank Reilly.

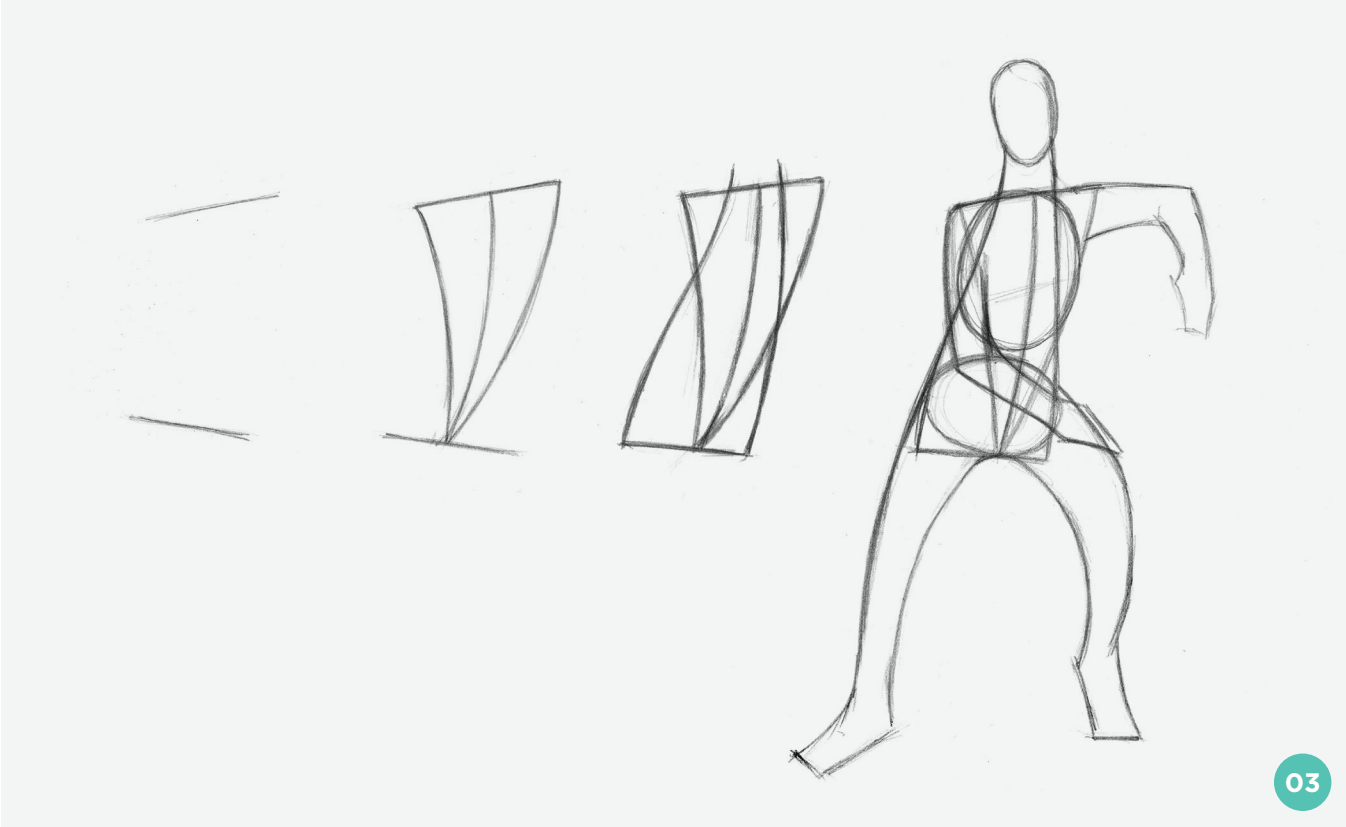
The Reilly Abstraction is a method of drawing based on a set of rhythmic lines to draw the figure. **01 – 02** shows eight quick sketches that demonstrate how the Reilly Abstraction can be adapted for different poses. The first five sketches are basic simple poses and the last three sketches are more complicated poses with extreme foreshortening.

**01**  
Basic posing  
using the Reilly  
Abstraction

**02**  
More complicated  
poses with  
foreshortening







There are many ways to start the Reilly Abstraction. You can begin by drawing out the ribcage and pelvis first, or by drawing the center line. I like to start out by finding the angle of the shoulders and the hips first (**03**).

When using this method you will use three types of lines: a C-shaped curve, an S-shaped curve, and a straight line. Next is to find the center line. If you imagine the shape of the spine, it becomes apparent that the center line will be a C-shaped curve.

Now connect the outer points of your shoulder-line down to the crotch. Whatever type of line the center line is, the shoulder lines will match. For example, the three lines in **03** are C curves; you will never have a C curve center line and S curve shoulder lines.

Next, take a rhythm line from the neck down to the hips. Here we have an S curve on the left and a C curve on the right. Now we have something that resembles a torso. Next I add

the legs, the arms, and then the head. After that I find the pelvis and the ribcage. In some instances such as here, you can take the neck-hip rhythm line all the way down to the foot. Now we have something that resembles a simple figure.

If you are struggling to see the lines at first, find a photo reference, take a piece of tracing paper and trace out the lines over your reference. After that, it is simply a case of practice until you are able to visualize those rhythm lines on live or imagined models.

The next four figures will demonstrate how to set up your simple figure using the Reilly Abstraction, how to flesh out the figure from your base, and an example of a finished rendered figure drawing.

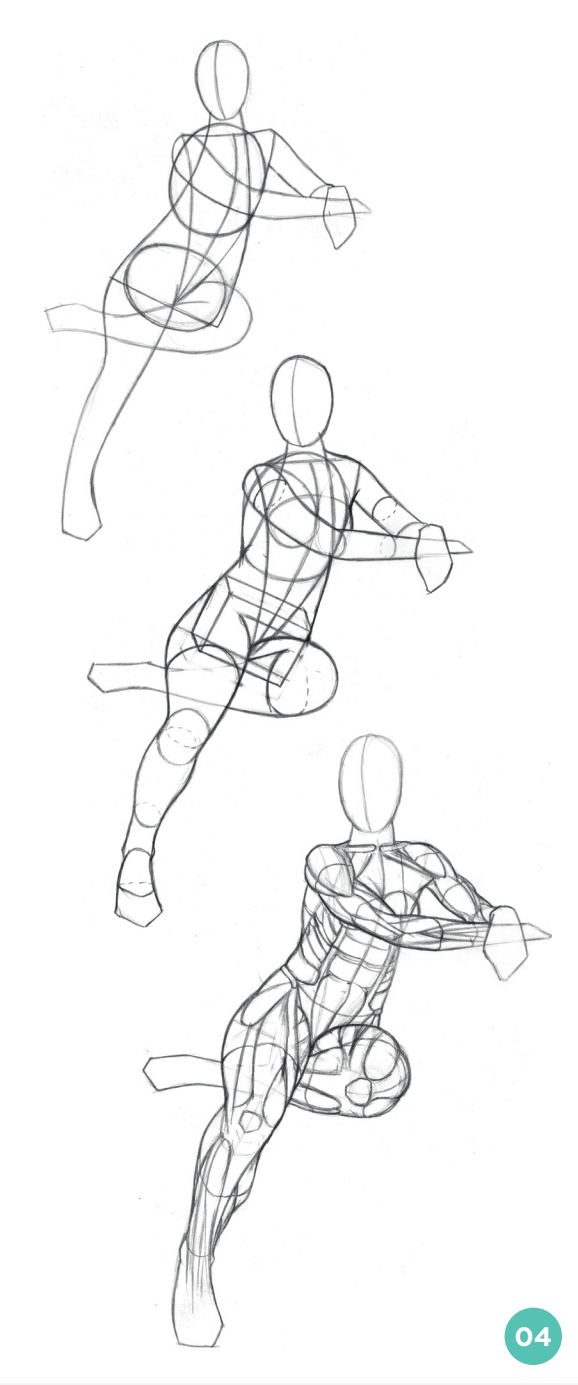
I have also included an anatomical diagram for each figure using all of the notes mentioned throughout this chapter, as a reference.

The first three drawings are short, two to three hour drawings. The fourth drawing is a thirty hour drawing I did of a muscular model, which is great for studying anatomy.

**04** starts with the Reilly Abstraction. The basic flow of the pose is a C curve, which I have for my center line. Remember everything in this step is simple: C curves, S curves, and straights. My goal in the Reilly Abstraction stage is to capture a nice flow in the figure and to get the correct placement and proportions of the big forms. I am not concerned with the contours of the body in this stage.

After I am satisfied with my initial lay in, I start to add a 3D element, still using only lines. I also start to focus a bit more on the contour. First I will create overlapping lines to get the feel of one form in front of another.

For example, on the right side I create a line for the chest muscle overlapping the arm to show that the chest muscle is in front of the



arm. You have to be aware of where some parts of the body overlap others as it helps to add solidity, believability, and complexity to your drawings.

While I am working on adding solidity to my piece, I will also be working on the contour a little. **04** shows how I add more shape to

the lower legs, the shoulders, and sides of the body, but still keep it simple. Next I start to add cross-contour lines to the body to give it a more 3D look, and begin figuring out the angle and perspective of the limbs. Notice how the cross-contour lines appear in the arms and legs; these give me an indication of how the angles change.



**03** Use the Reilly Abstraction to begin a pose  
**04** Refine the lines  
**05** Finished drawing



I also create a box for the pelvis. This isn't a necessary step; I simply want to show the perspective of the pelvis, which is often mistakenly depicted at a consistent 90° angle to the spine, and thus looks too rigid and uncomfortable.

After I am happy with this stage of the drawing, I start to work on rendering out the figure. I create an anatomical diagram to study from and show that it can be difficult to work with the body in different poses. I always keep the anatomy in mind when drawing, and knowing the correct anatomy is very important to make your drawings believable. If there is an ambiguous shape you are trying to render out on the figure, knowing your anatomy will help flesh it out.

**06** shows a female back pose. The flow of this drawing is a subtle S curve. The twist caused by the ribcage and pelvis create the S curve. As I mentioned before, keep this stage simple by using nice, flowing, rhythmical lines.

In the next stage I create an overlapping line to separate the pelvis and ribcage, bringing the pelvis forward and tilting it out a little toward the viewer. The legs are a little more difficult, as a certain amount of foreshortening is required. A sound grasp of anatomy is imperative here, as the way that the muscles bulge out or create crevices at certain angles will affect the shape of the silhouette more dramatically in foreshortened forms.

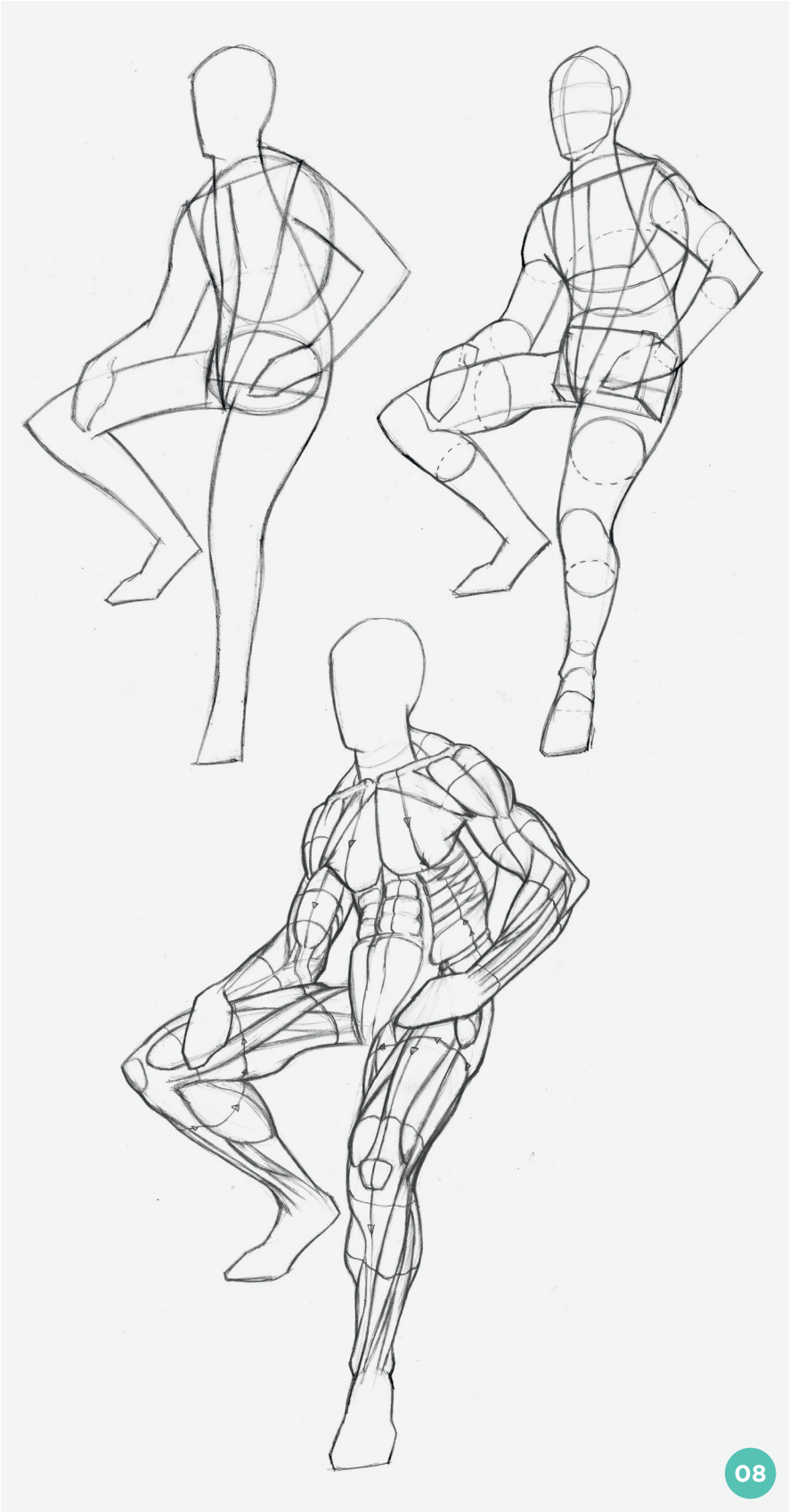
**06**  
A female back pose

**07**  
Finished drawing





08 again shows the process of sketching a figure using Reilly Abstraction. To reiterate and summarize: start your figure with simple, flowing rhythm lines to create a rough pose and then create contour lines to flesh out the body and give a little perspective and direction. This may sound repetitive as the concepts are simple, but it takes practice and repetition to truly understand this process.



08  
The lines of a male

09  
Finished drawing



09



In **10** the figure is primarily at a side view, which causes us to change our use of the Reilly Abstraction a little. After drawing in your center and shoulder lines, you will notice that the neck to hip lines change. While you can still follow the neck down to the hip, as demonstrated in the drawing, it does not help the pose. In this particular pose, I follow the neck down to the front of the pelvis instead.

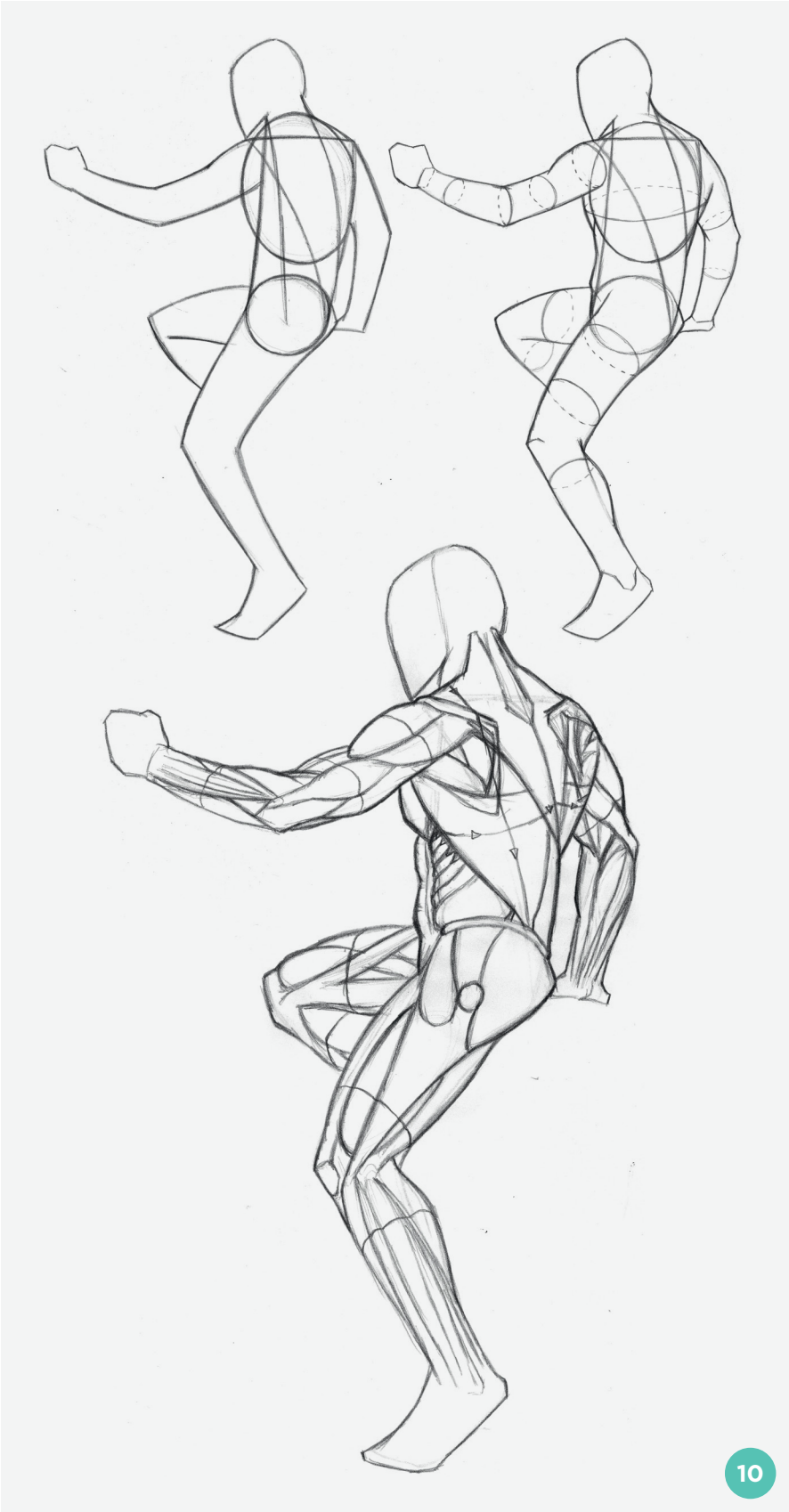
In the next step, I create several overlapping lines to show that the deltoids and forearm are ahead of the bicep. I also add a line for the back passing ahead of the right arm, and a line for the lower leg being ahead of the upper leg. These lines may not seem much, but they add a definite solidity to the image as the limbs and forms interact spatially.

As I mentioned before, stay aware of the underlying anatomy of the human form at all times in your artwork, and you will be able to use them in your Reilly Abstraction-inspired sketching to create perfectly proportioned and anatomically realistic figures.

Also, don't be discouraged if it at first you make mistakes. It will take practice and constant observation to achieve those first-class renders.

**10**  
The lines of a male  
pose from the side

**11**  
Final drawing

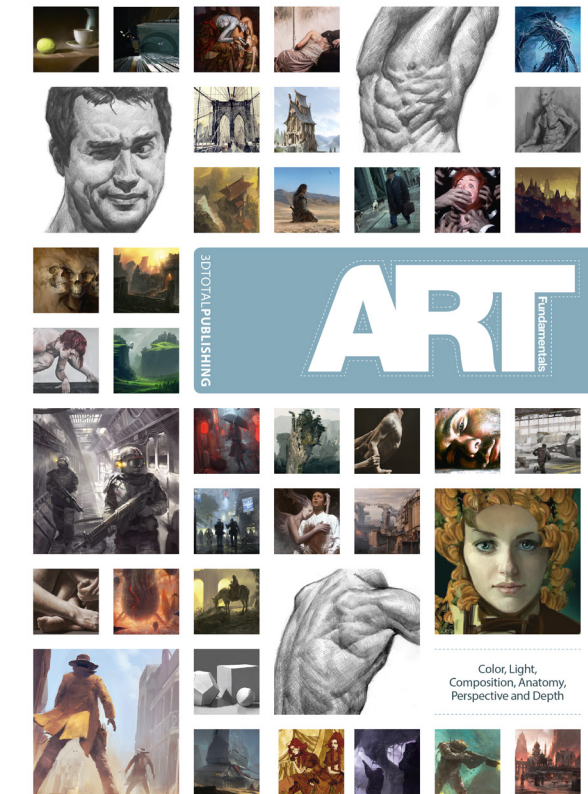




# ART

## Fundamentals

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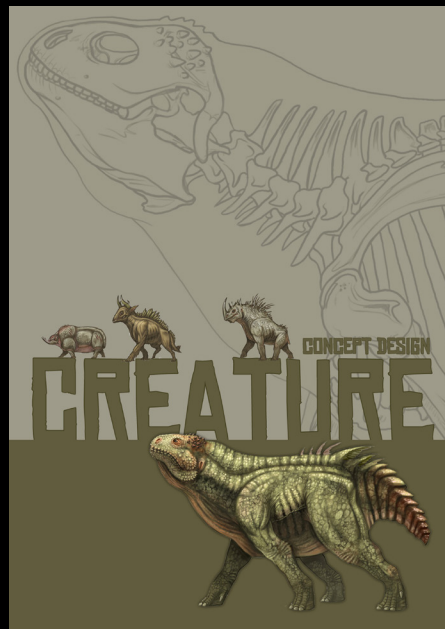


# Creature design 101

By Mike Corriero

Web: [mikecorriero.com](http://mikecorriero.com)

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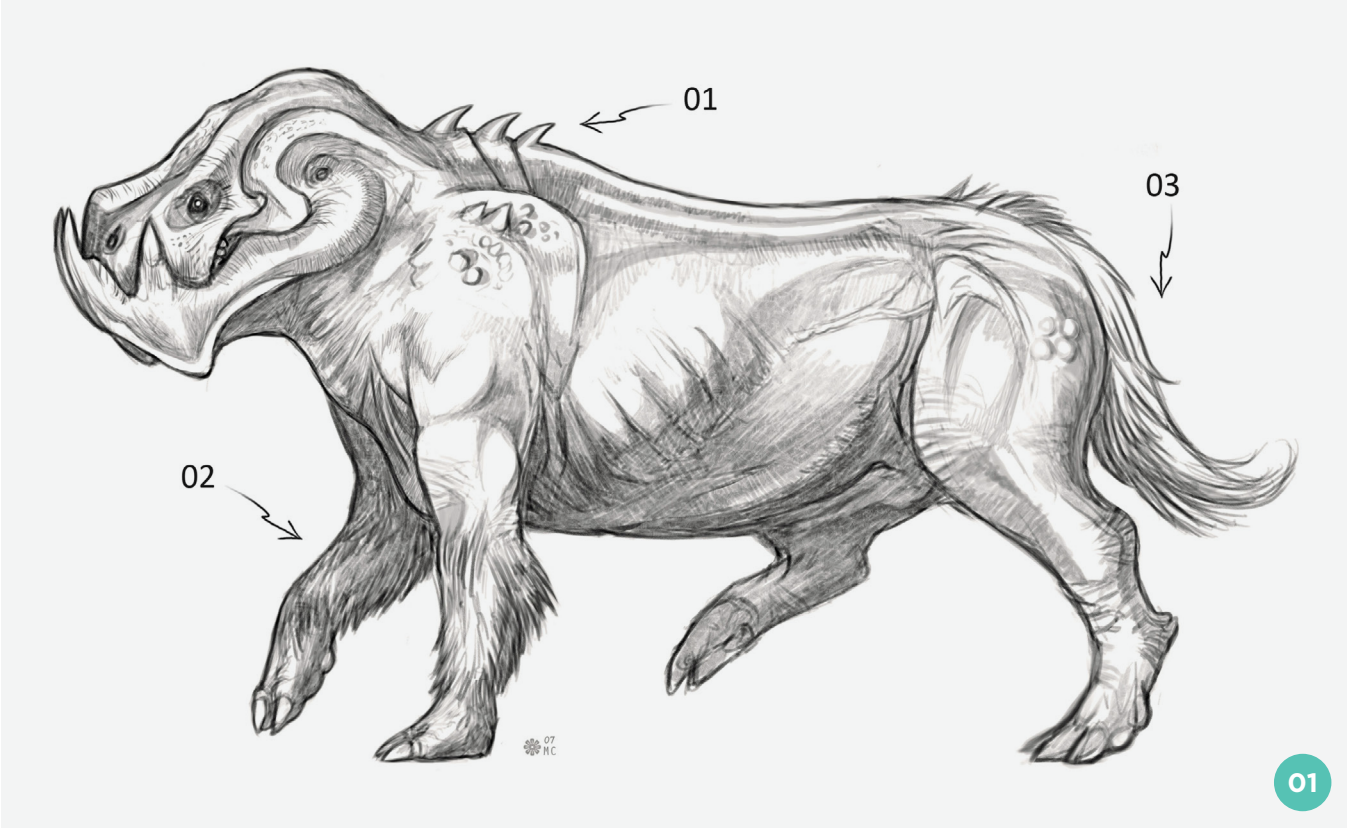
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In this lesson, we'll be exploring how to create naturalistic, imaginary creatures by drawing on similar aspects of design and anatomy that exist in real-world animals. A naturalistic approach to creature design abides by certain rules to coincide with that of true animal anatomy. Naturalistic creatures are unique and original designs but they stick to the traits of each class type, be it mammal, bird, fish, reptile, amphibian, insect, crustacean, or arachnid. This means that, although they are creatures, they won't be devils; they won't be aliens or completely fictional in body structure.

With an understanding of how animals within our own world work, between the different types of bone structures and body types, it will be much easier to design something that doesn't exist. You can mix and match portions of animals, although it's important to make sure that they blend well together. You don't want to just slap the head of a tiger onto the body of a fish because, while mythology

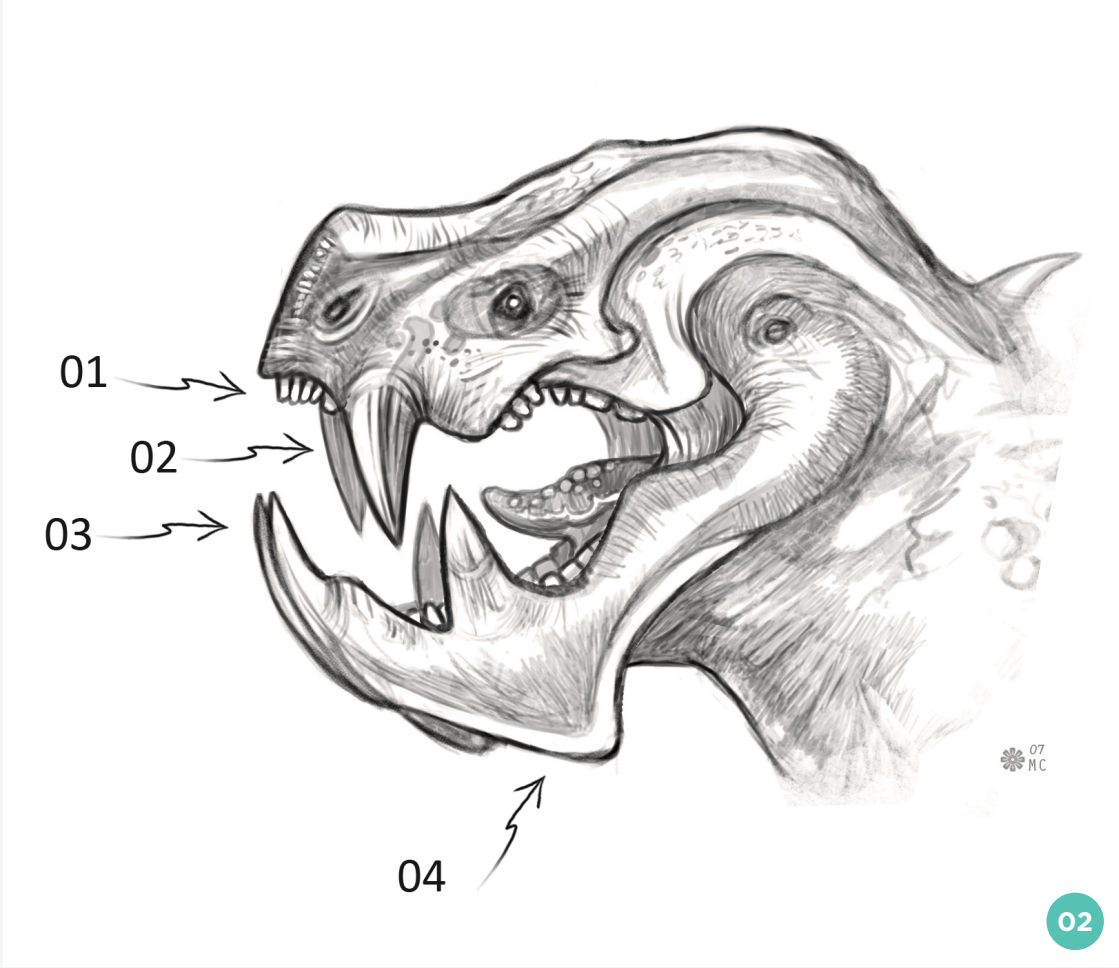
boasts gods and creatures like that, in reality it wouldn't flow well. It is possible to give a fish-like creature distinctive features that would resemble a tiger's face, but you need to keep in mind how the eyes work under water, how it breathes under water, and why a fish contains scales, not fur. So, when you mix and match aspects of one animal with another, remember what is actually plausible and the defining attributes of the class the creature falls under.

Classes of animals that share similarities in reproduction, such as laying eggs (birds, amphibians and reptiles, and as a sub-category: insects, crustaceans, and arachnids), will often share other features too. The three classes of invertebrates are closely related in their biological designs, consisting of multiple body parts and exoskeletons. Birds, reptiles, and amphibians also have similar body traits, so mixing and matching their limbs, skin textures, and features is a good idea. In retrospect, it has already been

mentioned that birds and reptiles are close in relation to dinosaurs, as well as amphibians. So, think of creature design just as you would a step in evolution!

Another class that shares reproductive traits are mammals, who carry their young within the womb until they are strong enough to enter the world. There are exceptions of course, such as the kangaroo or Tasmanian Devil, where the baby leaves the womb when they are no bigger than your pinky. Some species of mammal, like rodents, keep their babies in the nest until their eyes are open and they start to grow fur on their pink skin. Usually, larger mammals give birth to their young out in the open and the young need to be capable of walking, and even running, almost immediately.

There are certain measures to be taken when thinking about the proportions of a creature's anatomy (Fig.01). I will go further into this in the later parts of this series, but I want to



01  
Using anatomical knowledge to create something new

02  
Breaking down the elements of the head

point out how they affect the overall nature of a creature. In this design, you'll notice that the overall body shape resembles something of a warthog or miniature pony. Although every area of this design was conceived through the understanding of how animal anatomy works, it was not referenced from either of those animals. Its body construction consists of a hip bone and shoulder blade that are more or less at equal height, a lengthy abdomen, and a short neck with generally short legs. This, along with the spiked vertebrae on its dorsal hump (01), are all designed for protection in a defensive form. The spiked vertebrae protect the back of the neck from predators. The tufts of fur on its forearms (02) help keep those thinner limbs warm, while also acting as a bit of a shock absorber and soft padding when it lies down. The tail, which very much resembles that of a horse (03), is there to help

balance during running and it also serves to cool the body down and fend off annoying insects. It's important to think about why you're incorporating something into your design, even if it's simple decoration. Think about the skin texture, the body height, the strength of the animal, where it stands on the food chain, how it defends itself, how it reproduces and so on.

This is also something I will go into in more depth in the later parts of this series, so I'll just cover the basic reasons behind the design of the face now (Fig.02). It's very important that you think about the construction of the mandible, how the jaw will manoeuvre, how the teeth, tusks, or top and bottom portions of the muzzle will connect when opening and closing. (01) First and foremost, the teeth consist of incisors (which are at the front

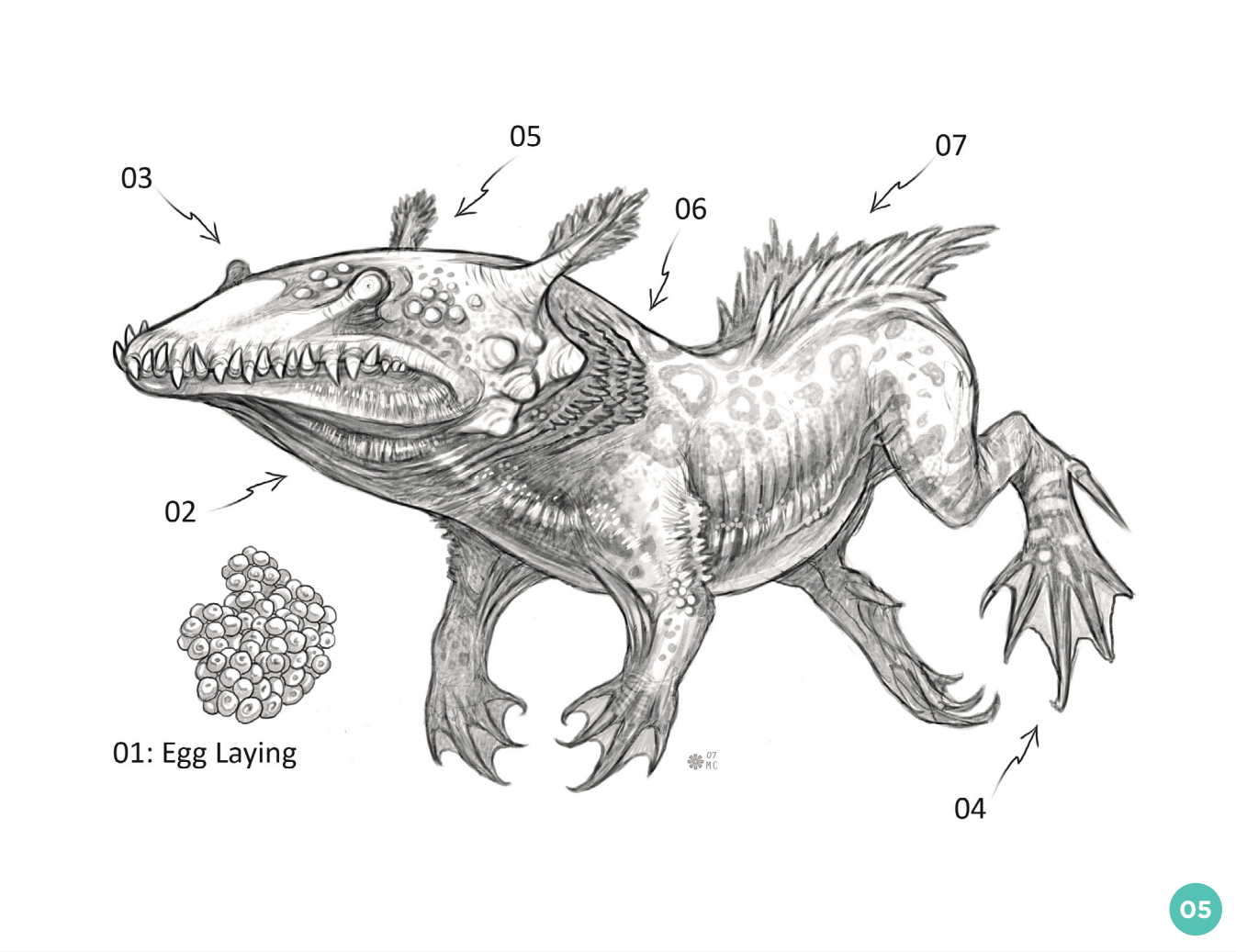
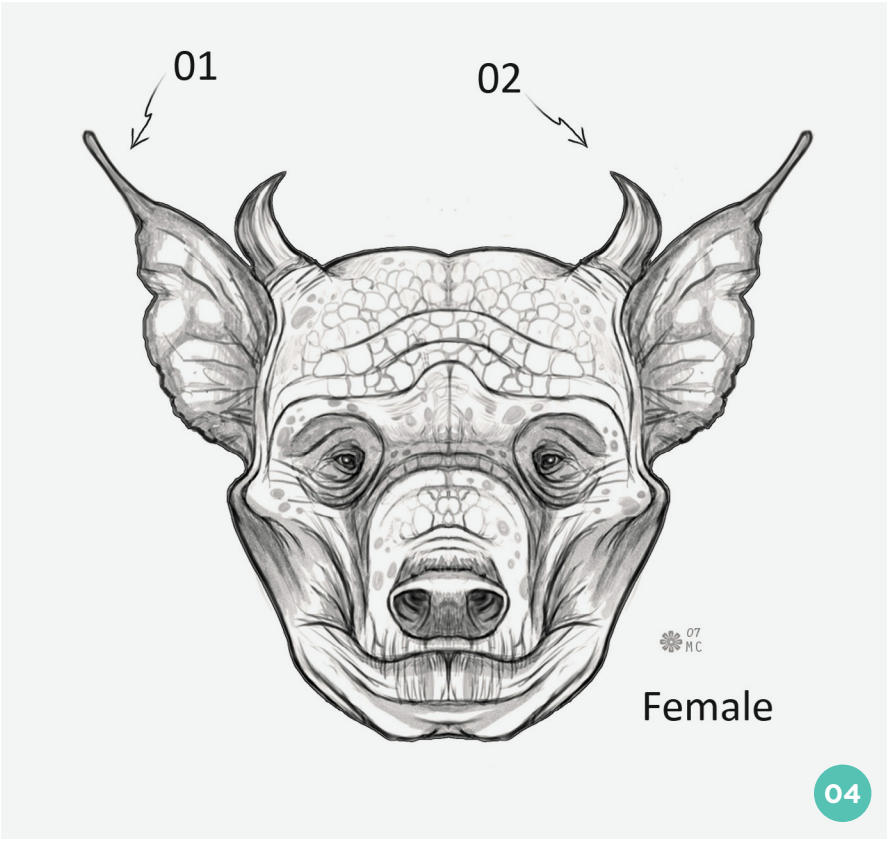
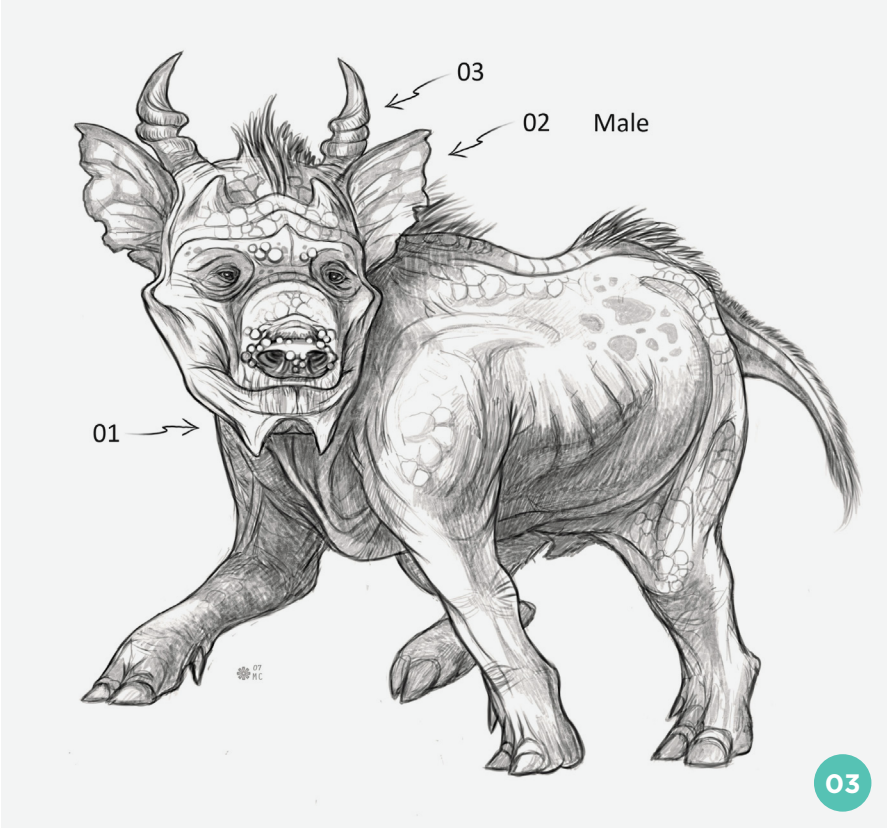
of the jaw), molars (which are at the back) and canines (which are usually in between the two). Each type of tooth has its own job for chewing, tearing, ripping, crunching or grinding food. (02) The much larger pointed teeth are canines, though they could be considered tusks. They are not visible in the full body sketch because they are fitted into a hollowed section between the lower canines and the extension of the mandible (04). By extending this portion of the lower jaw it gives the creature a unique look but it is actually serving a purpose. (03) A third set of canines, to be used more like tusks, are positioned at the lower front of the jaw and extend past the muzzle. All sets of the large tusk-like incisors are meant to crush bone and pierce flesh. Although, as this creature is a herbivore, they are used purely for defense — much like those of a Hippo.



A quick glance and the viewer might identify this creature as some sort of pig, hog or even a bat-like faced design (**Fig.03**). It has a stout little body; it's short and bulky with hoofed toes and a thick almost scaly hide. A much more muscular body and longer legs in comparison to the body weight allows this fictional creature to run much quicker than an actual pig. It has a much shorter muzzle comprised of two sets of horns, one which is still embedded beneath the skin causing small protrusions and the other much larger twisted horns (03). The larger horns serve as a means of defense and male rivalry during mating season. (02) Large thin bat-like ears are very sensitive, alerting the creature of any nearby danger. (01) Similar to the first creature, the lower jaw has hollow pockets to fit slightly oversized canines that the creature uses to crush bone and tear flesh.

**Fig.04** shows the female version of the creature in **Fig.03**. As you can see, the female differs from the male in both large and subtle ways. There are reasons for this, which I'll explain through the design choices that I've made. One of the main differences is the size of the horns, shape of the horns or even lack thereof. Many male deer have antlers whereas the females do not, though the males will shed their horns. The female face of this creature consists of much smaller horns (02) that are only slightly curved and not as twisted as the male's larger horns. They are meant for defense against predators, but not as rivalry fighting. The female also lacks the secondary set of horns and warty, larger nose of the male. Overall the female has a slimmer, less bumpy face and a thinner, sleeker body. (01) In addition, the females have a long tip at the end of each ear with a bulbous tip that heightens their senses. There is a lack of hair atop the head and along the back and they have smaller canines. In short, it has more feminine features that are more appealing than the male's.

These differences, along with overall size, weight, and color variations, can be seen in



the opposite sex of lions, deer, birds, pigs, goats, and elephants to name a few.

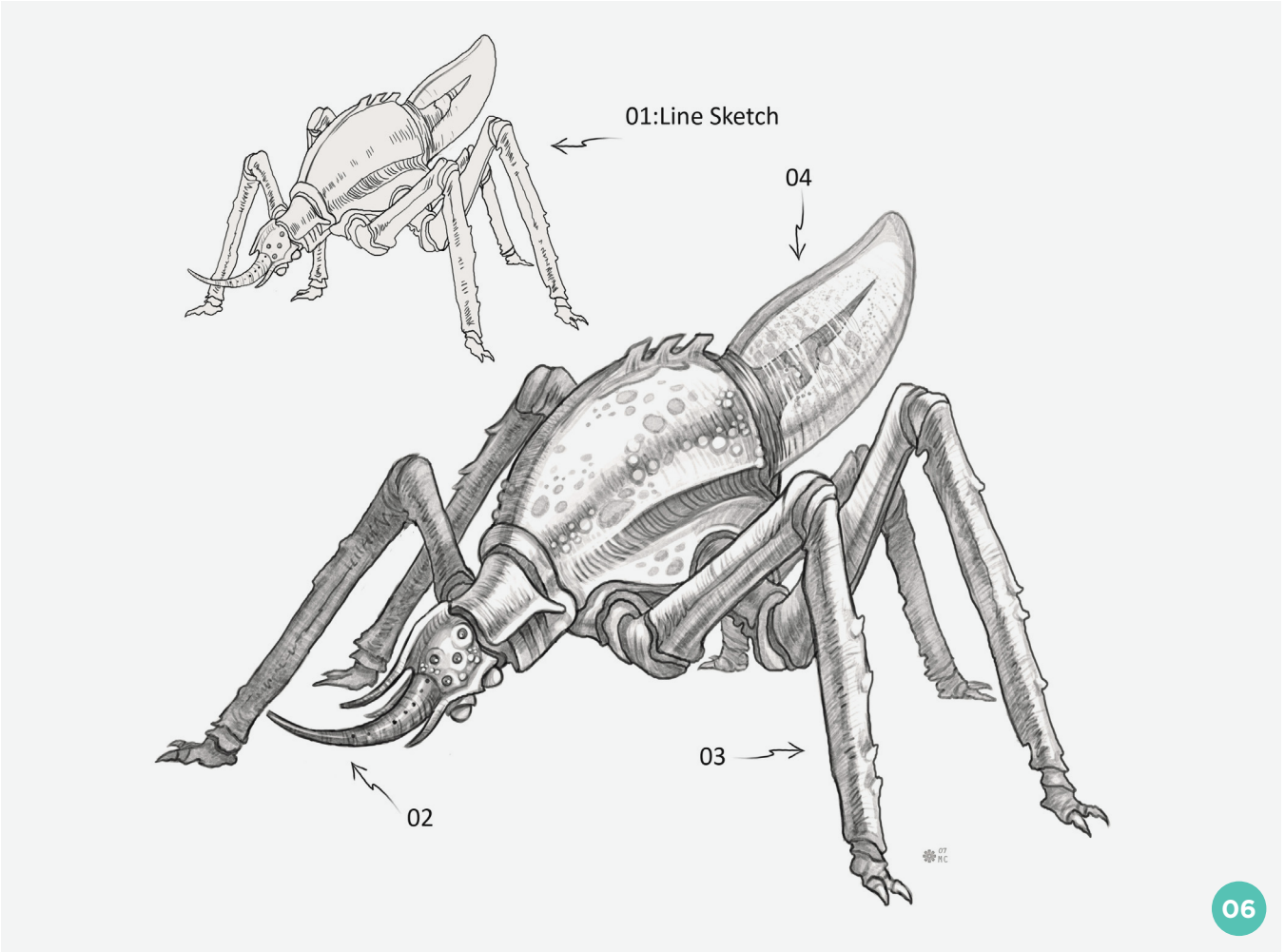
**Fig. 05** is an amphibian-based creature, which is also an egg-laying species. They will usually lay clusters of tiny soft eggs stuck together in clumps (01) until they hatch as tadpoles or larvae. (02) A large sack of loose skin under the lower jaw and neck allows the creature to create a distinctive vocal call which echoes through the night. This is their way of communicating with others of its kind, and for mating calls. (03) The eyes are found at the top of the head not at the sides like most mammals and birds. The reason for this is because amphibians, and some reptiles like crocodiles or turtles, will rise to the top of the water, only allowing their

eyes or nostrils to breach the surface. (04) Although this creature resembles a frog or a crossbreed between that and a newt, it has some modified differences that set it apart from any known amphibians. The longer, webbed legs allow for quick swimming and leaping but also serve as a defensive kicking mechanism with the addition of a spiked poisonous spur. It also has a heavier, more sturdy jaw lined with rows of sharp flesh-tearing teeth. (05) Similar to species of newt, it has external gills as well as fish-like gills (06). This makes it capable of surviving in low oxygenated water pools as well as larger lakes and ponds. The frilled gills around the neck region can be tightly closed and internal gills can allow the creature to breath air for long periods of time. This makes it possible

for the creature to move from one location to another if a pond becomes dry. (07) A pair of fin-like appendages are found on the rear to act as rudders and allow for quick maneuvering underwater.

- 03**  
A male pig-like hybrid
- 04**  
The female of the species
- 05**  
An amphibian hybrid





Heading on to the wonderful world of conceptual insects (**Fig. 06**), we have a creature that consists of an exoskeleton with multiple limbs (03) and eyes. Creatures that resemble invertebrates can be much more decorative in design without there having to be as much reasoning behind it. Spikes, bumps, and other imperfections in the exoskeleton can serve many purposes, but may also just be there for a unique design. (01) Generally for all creature designing I'll use something similar to the sketching method of leaving your pen on the paper and working the design out in one stroke.

Then there is always the method of laying the design out in major shapes to later refine them in detail. Whichever result works best, it's usually helpful to work out a clean line

sketch that can be changed easily. You'll notice the repositioning of the limbs on this creature from the initial line work to the more refined sketch.

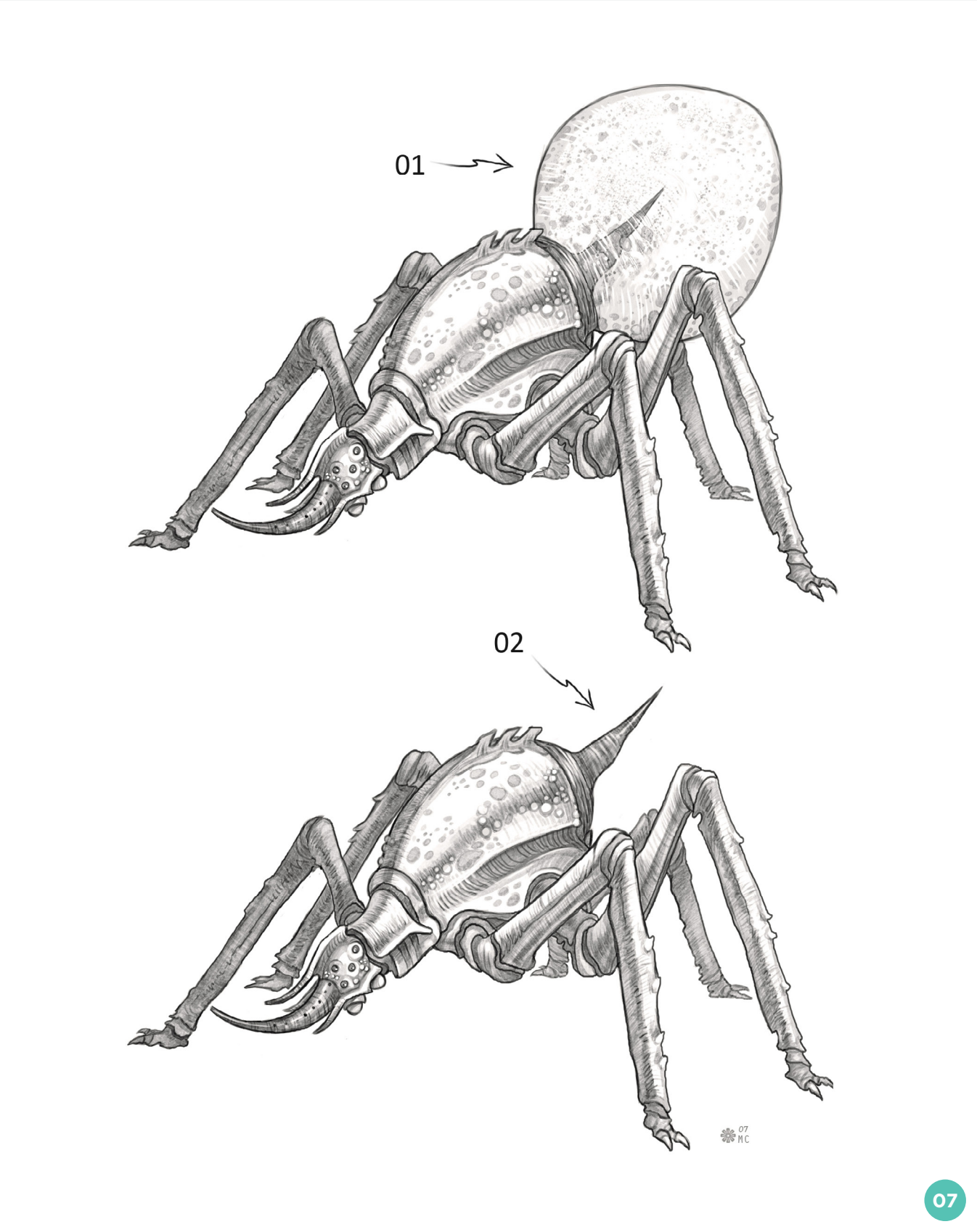
(02) This long thin tube contains a proboscis much like that of a butterfly. Its face is harmless but that doesn't mean the creature doesn't have other means of defense. (04) In the current state the sack is half full.

In **Fig. 07** when the creature is startled, or feels threatened, it will quickly disperse a fowl and very powerful gas that fills the sack to a large bulbous shape (01). This thin membrane is capable of stretching to an enormous size until it bursts and releases the noxious gases inside allowing the critter to quickly scurry off, unharmed.

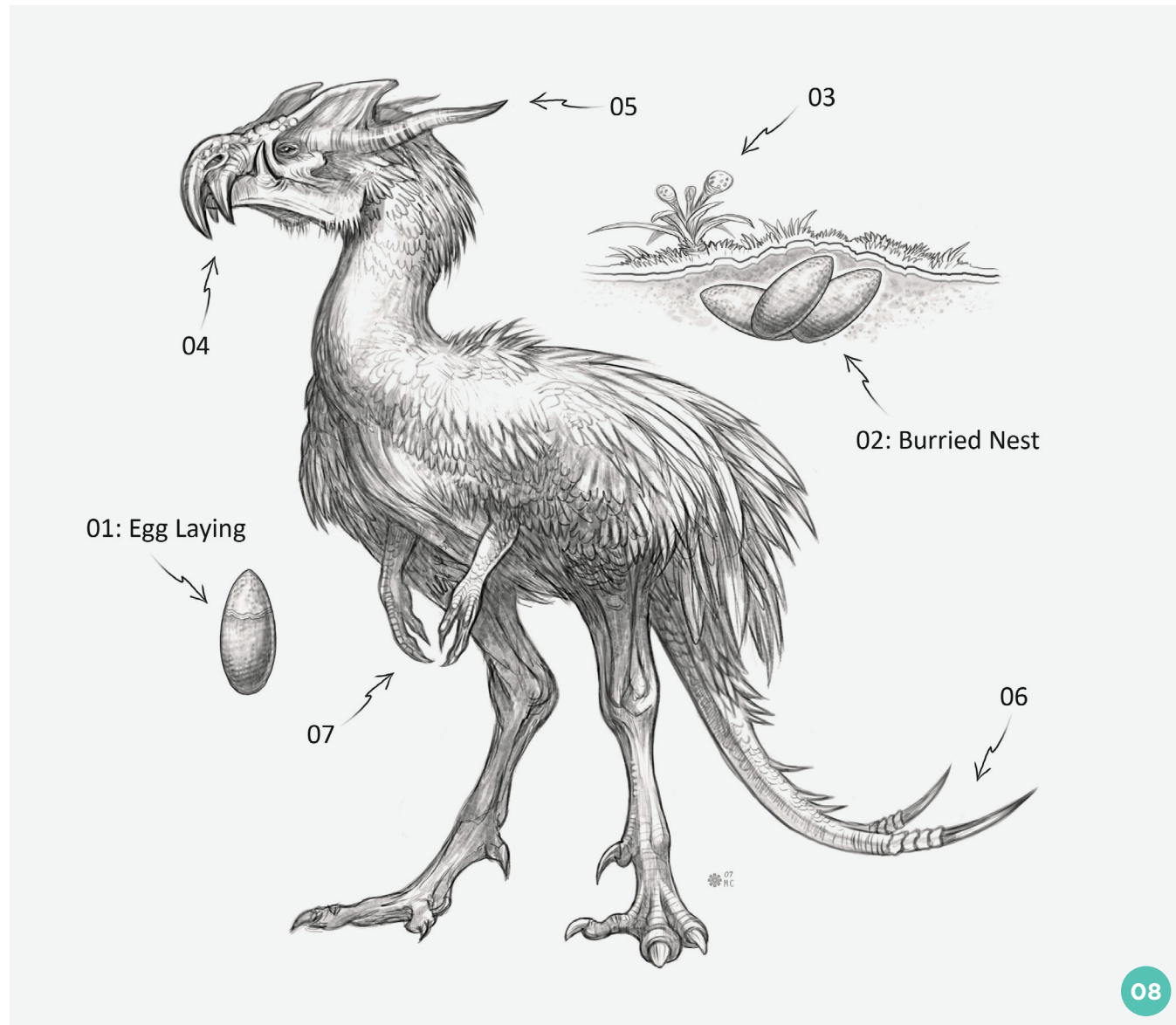
(02) In addition to this defense, once the sack has burst it is still equipped with a poisonous stinger until it is capable of reproducing another membrane. If cornered the creature will continue to face its rear toward any predator, lifting its stinger as a warning.

**06**  
Creating a new insect

**07**  
The insect utilizes its defense mechanism, revealing a backup plan





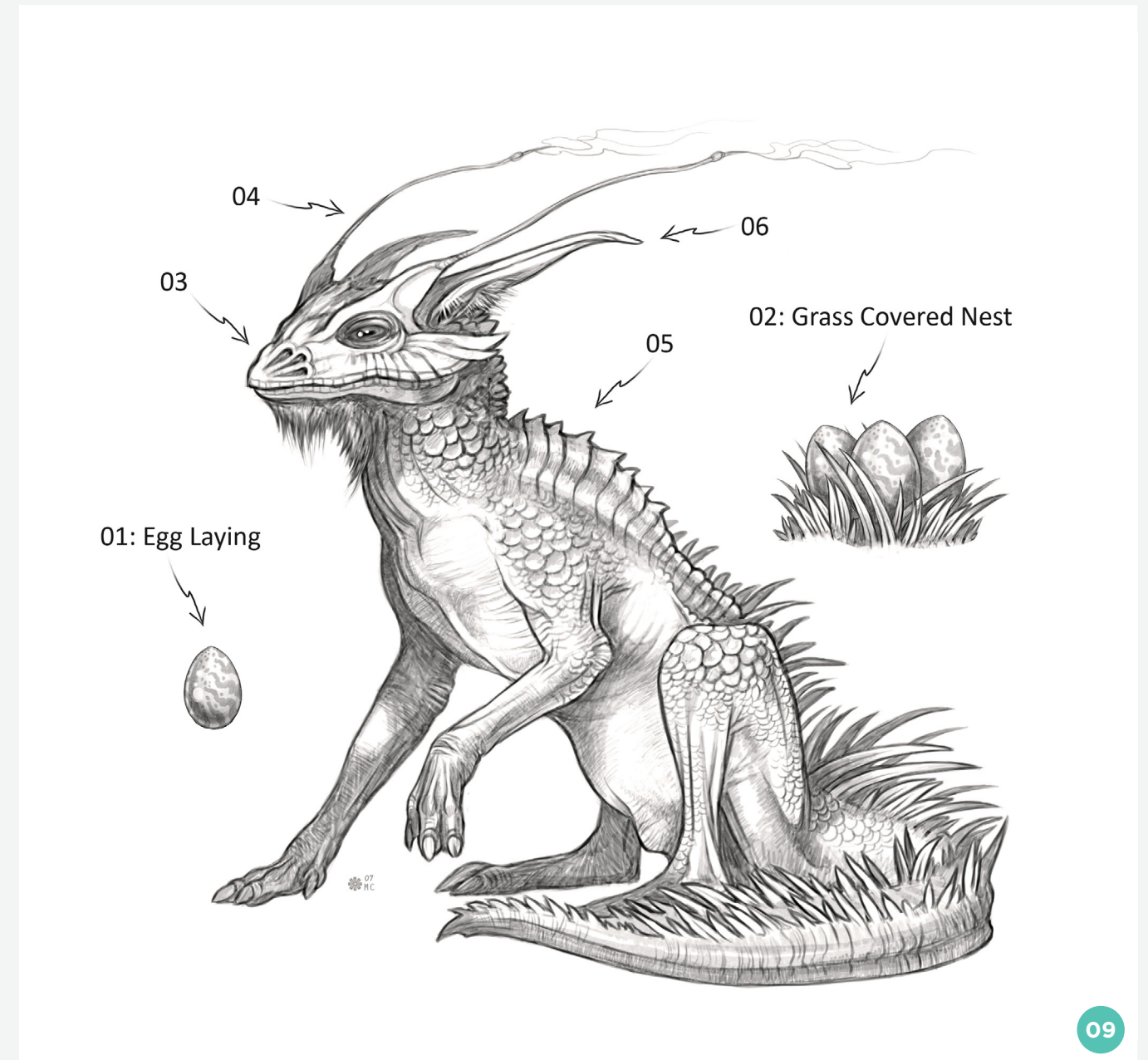


Striving for something between the Jurassic and the modern day birds and dinosaurs, this creature contains elements of both with a few conceptual twists in its anatomy (**Fig. 08**). A large bipedal bird of prey, containing large talons on the ankles of its feet and a deadly fork pronged beak, this is a dangerous species. (01) Like its ancestors and the inspiration for its design, it is an egg laying creature. (02) It creates a nest underground that is lightly covered with dirt and a poisonous species of plant (03) is placed nearby to ward off any herbivores that might trample the eggs.

(04) Its three pronged beak can produce a deadly wound acting more like downward facing tusks or large canines. (05) It is also equipped with rear facing horns to defend and protect the back of its head and neck during attack. Adding yet another means of attack and defense, it has a tail reminiscent of a dinosaur or lizard containing a split tip.

(07) It also has two small, vestigial limbs much like a T-rex. These are used to help it up when its lying on its side, if knocked down or sleeping, as well as for clasping on to prey during attack.

It's clear that the next species is based on a genetic lizard (**Fig. 09**), but there are additions that set it apart from true reptiles or any existing lizard. (01) It's an egg-laying breed, usually small, soft-shelled eggs in groups of three to six which are hidden in grass-covered nests (02). Setting it apart from modern day lizards, it has the body structure of a mammal, with short nails or hoofed-like toes split in sets of two and three toes. Longer legs are designed for an upright running position, unlike the sideward motion and position of lizards legs, which are generally lower to the ground. (03) It's nasal



cavity is split into three sets of nostrils, each leading to distinct sets of lungs to conserve oxygen, allowing it to breath in and out of one set while it stores air in the others.

(04) A pair of long, thin antenna-like appendages act as extra sensory limbs which are also flickered in a quick back and forth motion to ward off predators and confuse them. (05) Usually the most vulnerable part of an animal, the back, is lined with an extremely

tough scaled and spiked hump leading down to a thick powerful tail. (06) To set the creature apart from any reptile or dinosaur, it contains a pair of mammal-like ears for extra sensitive hearing.

I hope the information in this part of the series has opened your eyes as to why it's important to relate to real-world animals, and also why there needs to be clear reasoning behind your design choices.

## 08

### Envisioning a dinosaur-bird hybrid

09  
The reptile has  
mammalian traits



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# Greek sculpting

By Rafael Ghencev

Web: [artstation.com/rafaelghencev](https://artstation.com/rafaelghencev)

Featured in:



Classical  
Sculpture eBook

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In this tutorial we are going to study some approaches to creating your own classical sculpture. I'm not a history of art professional, but I'll try to give a short explanation of Greek history. Ancient Greek sculpture is traditionally divided into six basic styles:

- Daedalic Greek Sculpture (c.650 – 600 BCE)
- Archaic Greek Sculpture (c.600 – 500 BCE)
- Early Classical Sculpture (c.500 – 450 BCE)
- High Classical Greek Sculpture (c.450 – 400 BCE)
- Late Classical Greek Sculpture (c.400 – 323 BCE)
- Hellenistic Greek Sculpture (c.323 – 27 BCE)

In this tutorial I'll be focusing on the Hellenistic style and the Baroque period as in this period, expression was used to dramatize the sculpts.

In the Hellenistic period, sculptors felt less compelled to portray the ideal world like their ancestors. They started to introduce topics such as pain, death, and sleep, offering new forms and expressions to explore. The aim was to portray expressiveness and atmosphere, something which is particularly obvious in the portraits, where these were used alongside an accurately sculpted face to capture the character of the subject.

After the Hellenistic period Greek traditions went into obscurity and only in the Renaissance (1300 – c.1602) and Baroque (1600 – 1730) periods did the Greek traditions re-emerge, this time in Italy. We know this period for famous artists like Michelangelo, Benvenuto Cellini, and Gian Lorenzo Bernini. This is the most famous period of sculpture.

During the Renaissance period artists were inspired by their predecessors from the Classic period. And then on the other hand, in the Baroque period, the inspiration was Hellenistic sculpture.

At this stage a large driving force in sculpture was religion, and Christian artists absorbed a variety of classical techniques and used and revitalized them. The vast repertoire of postures, gestures, and expressions that had been founded by the Greeks enriched their own genius, and they applied these resources when illustrating saints, martyrs, myths, and the heroes of the time. For this tutorial I will inspire myself with the Hellenistic style and the Baroque period, as in this time period there was a lot of movement and drama in the sculptures, and that is what we'll try to reproduce here.

### ZBrush is only a tool

There's something very important for everyone to understand from the beginning.



We must understand that CG modeling is only a tool, like a pen or carving tools used for sculpting. Nowadays I see a lot of guys starting CG thinking that the only thing you need is to read comic books and know ZBrush. They have forgotten that sculpture is more than that; you need to study your whole life to improve your artistic skill and think about your motivation, background, and feelings. Remember to always study classical arts, like drawing, sculpture, and photography. This will make you a better artist.

### Starting the process

First of all we need to collect references – a lot of references! This is to understand the style and the process. We need to study the poses, feelings, and emotions that the classical artists achieved with their pieces. You can do this with a simple internet search.

### Planning the piece

Before we start to build the model we need to plan what we'll do. The first thing I did was to think about the subject. I decided to represent Man's fall in the Garden of Eden. My idea was to show Adam on the ground with the fruit at his side. Once you have an idea, start planning how you will build the piece and make it strong and dramatic.

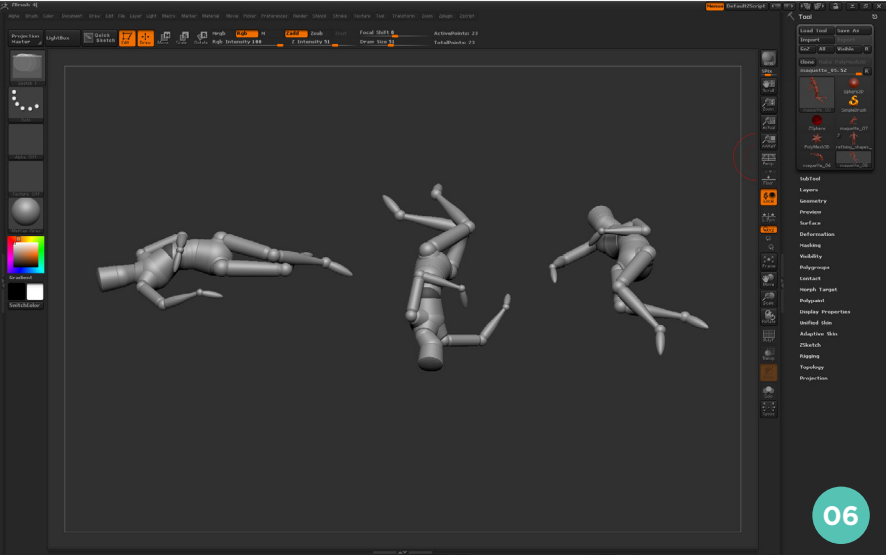
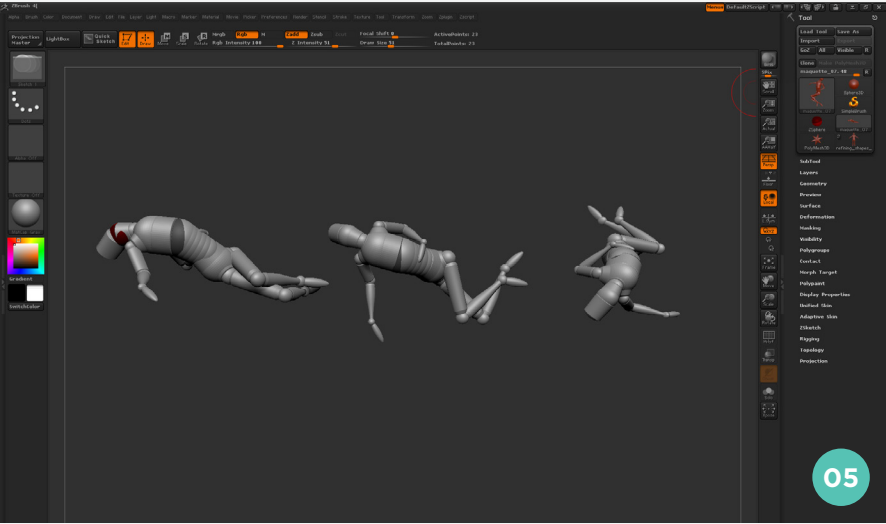
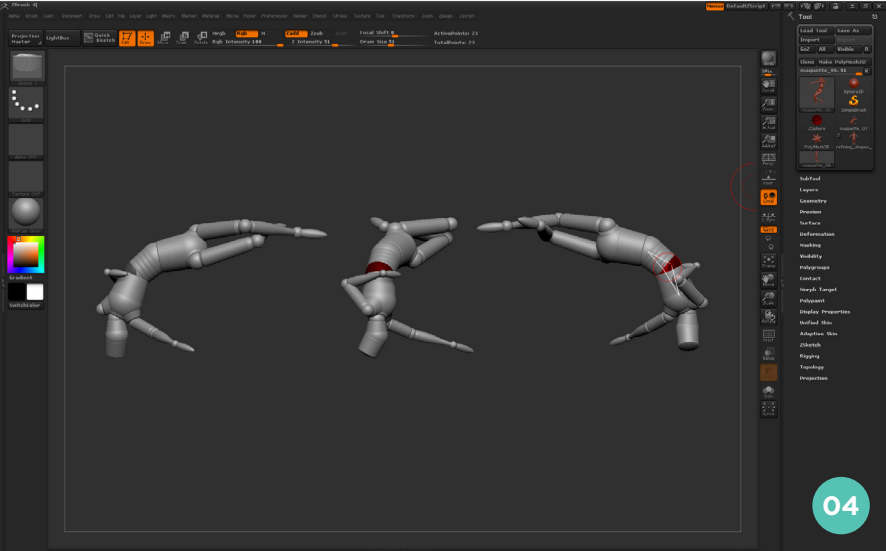
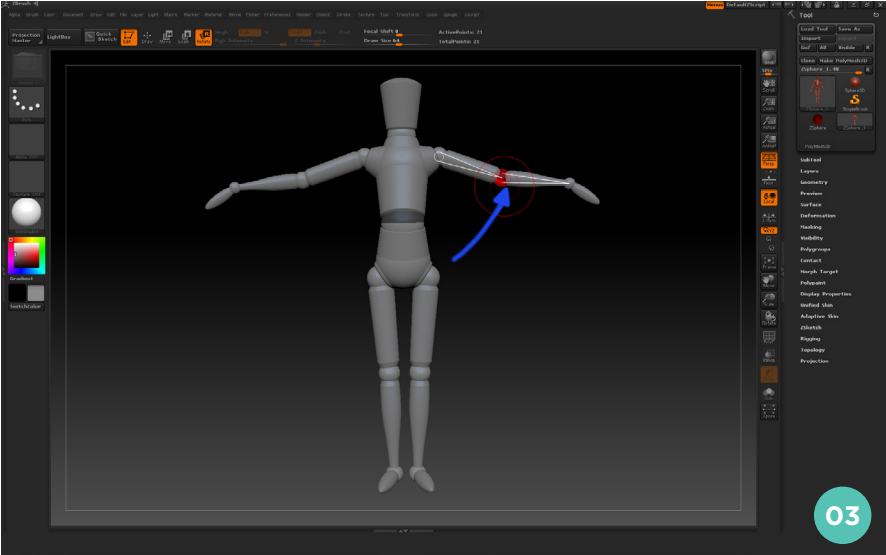
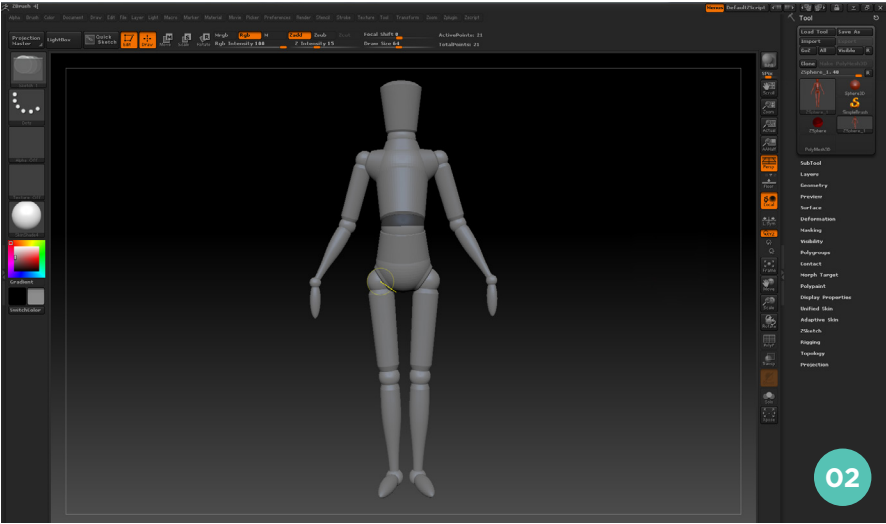
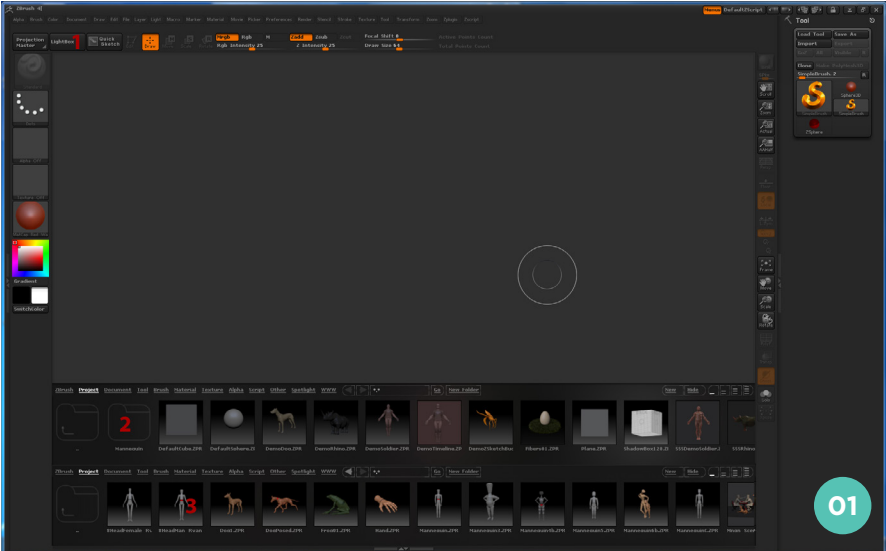
We have a couple of options. Firstly, we could draw something and make a few sketches to get an idea of what we want, but I know there's a lot of good artists that can't draw, so in this case I'll show you a different approach to plan your model. In the past artists used to build simple maquettes to understand and test the idea, pose, drama, and so on. So that's what we'll do.



Preparing our mannequin

Open ZBrush and go into Light Box > Project > Mannequin and choose “8headMan Ryan” (01). This is a simple mannequin that is easy to manipulate. This will help you create poses and layouts, and decide how the final model will look (02).

Using Move (W) and Rotate (R) we can play with the character, manipulating the arms, hands, legs, and head (03). Using these tools I created three different poses while trying to improve my idea and make it strong and dramatic. I decide to go for the pose in 05 (04 – 06).



01  
Open a new file

02  
Use a mannequin  
to pose

03 – 06  
Experiment with  
different poses



Starting the Model

Now we have decided how the model will look, we can start to build it. The first thing we need to do is make a simple mesh, which I like to use because there are no generic shapes in there, and nothing is pre-made. We need to think and transform the base into a unique model (07). With the base mesh in your hands you can now start to build the basic shapes.

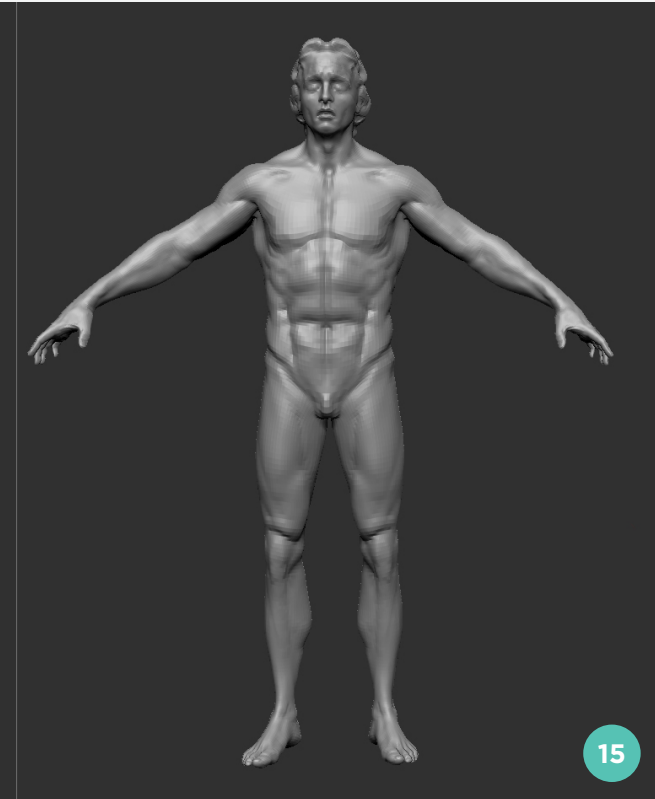
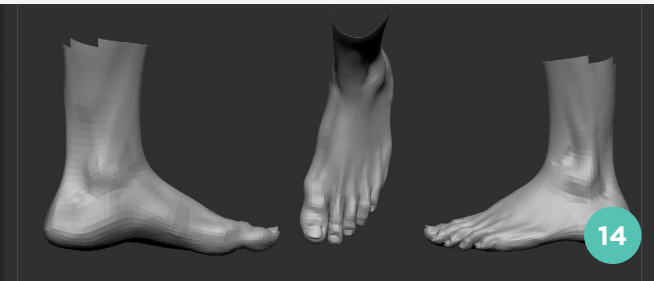
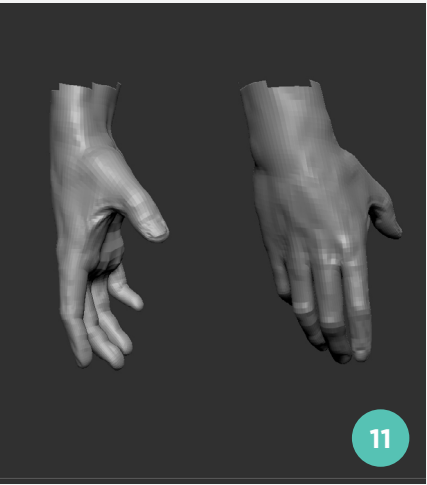
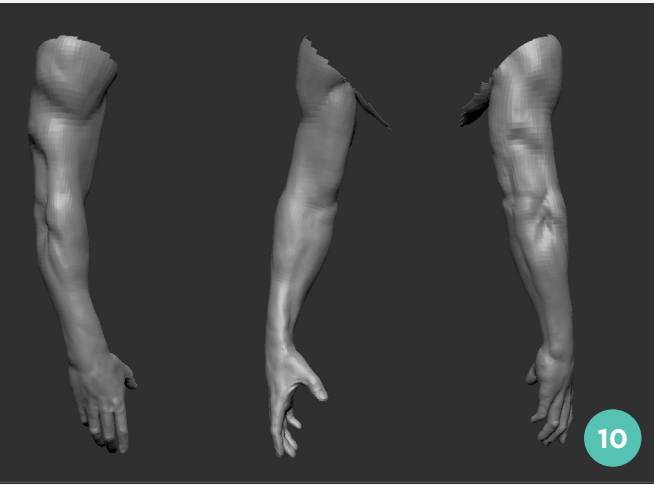
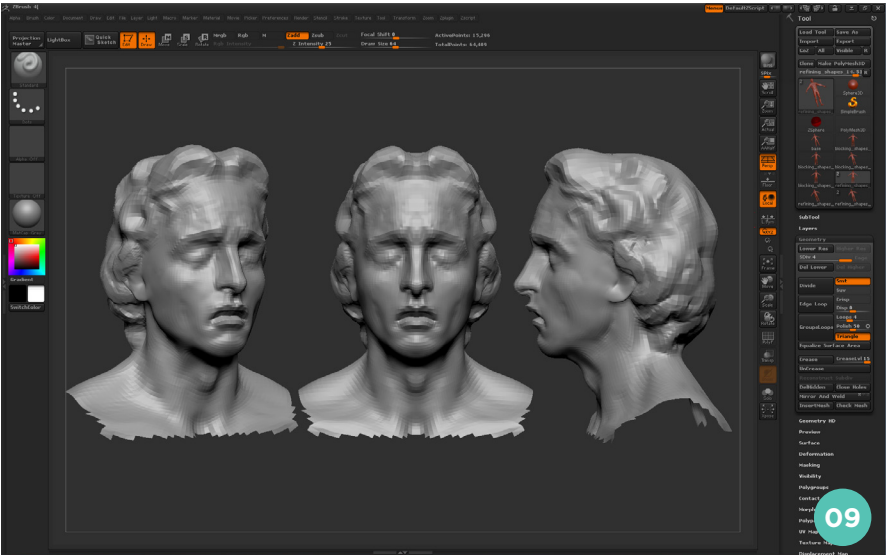
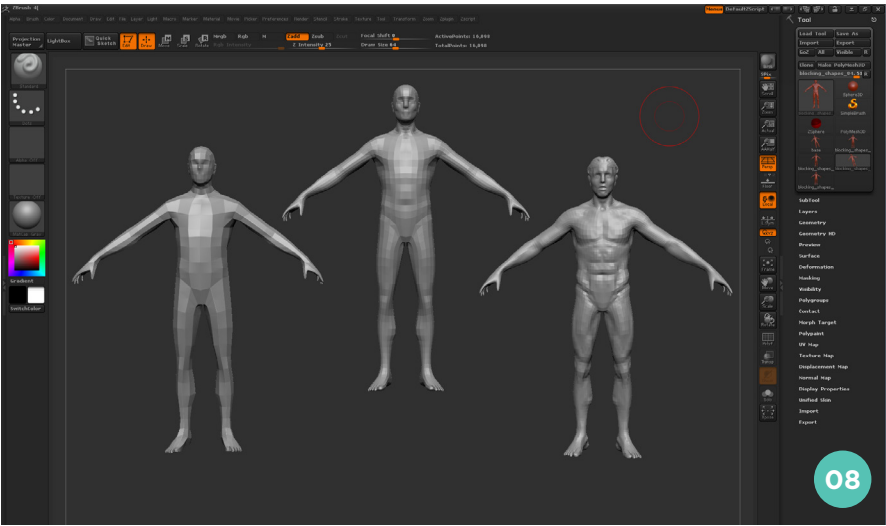
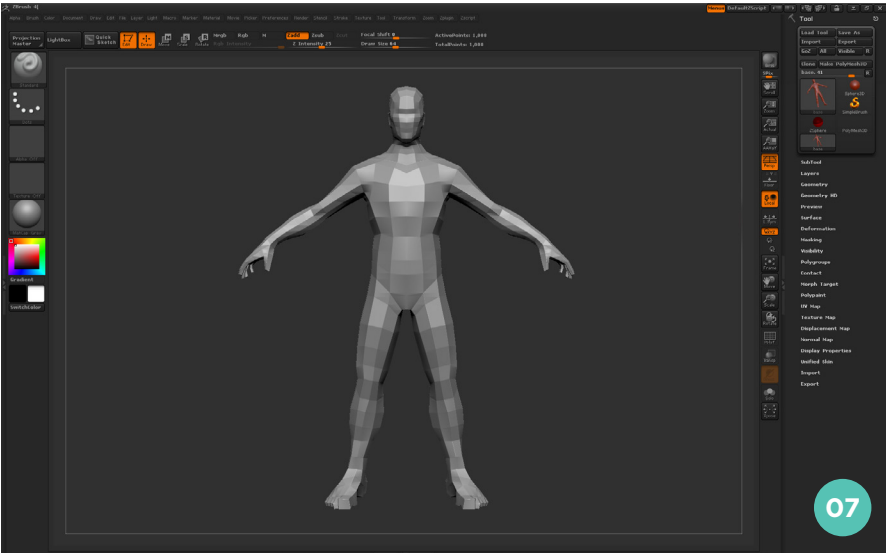
There is something we can use in our favor, and that is symmetry. We don't need to build one side at a time. However you do need to know the right time to use it and when to turn it off and start working without it. I will show you when it's time to turn it off. By pushing the X button you will activate the symmetry and then by using the Move brush you can start blocking in the basic shape of the model. At this point, the important thing is to reflect correct human proportion.

**TIP:** The important thing here is to work on the structure of the model. Fewer polygons is better when working on the big shapes and defining the silhouette. Only divide the mesh if you have already made all the possible corrections in that level of division.

Once you have added one more division, you can start to use the Standard brush to make some muscle mass and the basic form of the head. By adding one more division you can start to use the Clay brush to refine the individual forms, always checking if the proportions are correct. You can also add a little information on the head, like the mass to represent the hair. At this stage we can see the structure of the model is already done. All the important volumes are in place (08).

Refining muscles and members

Now you can add one more division and use the Clay brush to continue to work on the muscles and refine the face and head. This is important as we can now see how the expression on his face will look (09).



For the body we need to create a more natural look by adding more muscle information and by trying to balance the bones, muscle, and fat (10 – 15). This is a good point to start working on the hands and feet. When working on these parts you should always try to use a lot of references, because these parts are very important and expressive. If these elements are not done well the model will not be strong enough. Classical artists spent more time on

the hands and feet than the face, because they knew that these parts were important when it came to showing power and emotion.

Now it's time to turn off the symmetry and start to pose your character. You should always finish the structure of the model before you turn off the symmetry, and then you can put the detail on each side differently, to show some imperfections.

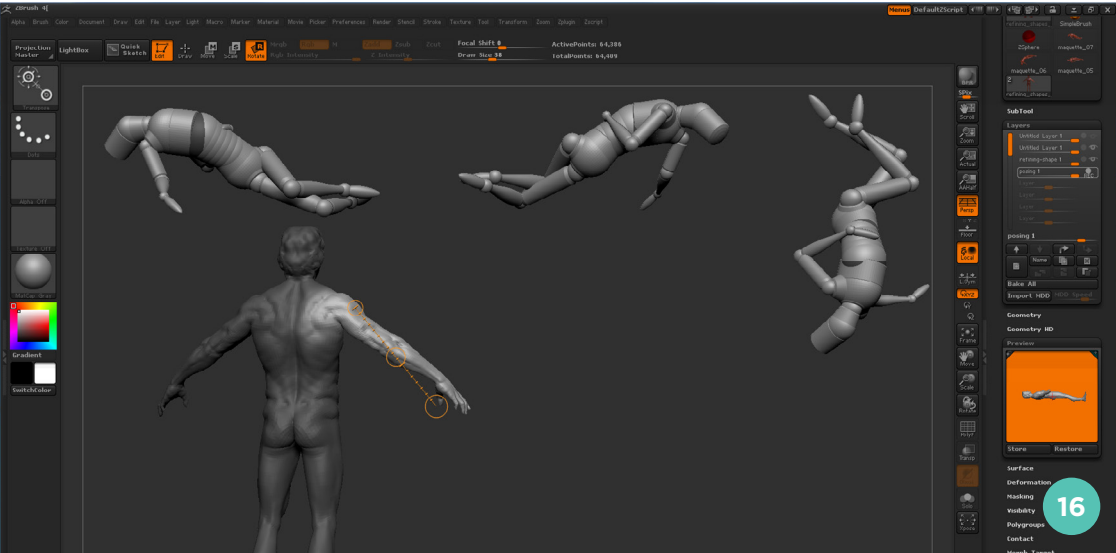
07 Flesh out the model

08 Add more mass

09 Model the face

10 – 15 Work on the hands and feet





16

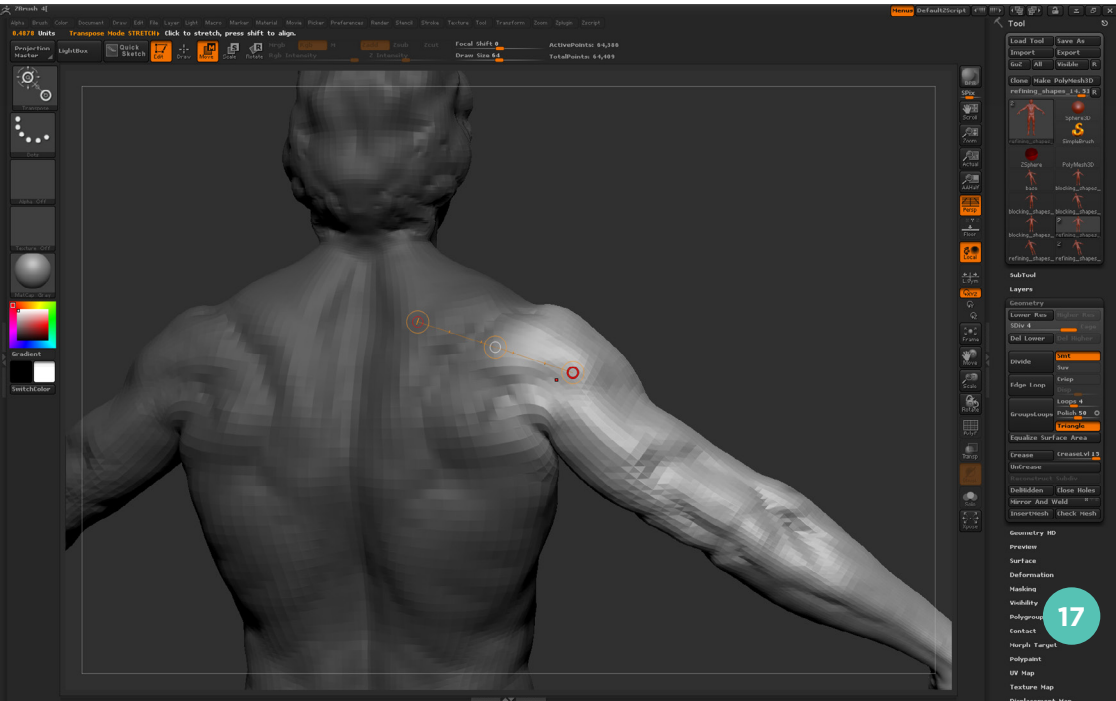
Begin to pose using the earlier reference

17

Remember bone structure when transposing

18 - 19

Start big and work towards the smaller details



17

## Posing

The next part is the bit that scares everyone. This would be very difficult if we hadn't planned before. With our simple mannequin made, everything from this point will be easier to do. The first thing to do here is to get our mannequin on the screen and do some snapshots with Shift+S.

You should get some different angles to help as references (16).

Create a layer for our pose in Tool > Layers and name it "pose." This is important to protect the original model in case you make any errors. After this press the R button to activate Transpose (Rotate).

With the Transpose button activated we need to create a mask to start the posing. So hold down Ctrl, and click on the part of the body you are going to edit. The important thing here is to always create the mask while

thinking about how the bones work in real life. Without this knowledge you can't get a good result using Transpose (17).

To organize the transpose process better I always transpose by starting with the big areas and moving on to the smaller ones. The first thing to do is transpose the torso, legs, arms, and head, but do not try to perfect the pose on the first try. Start by working on the basic form of the pose (18 - 19).



18



19

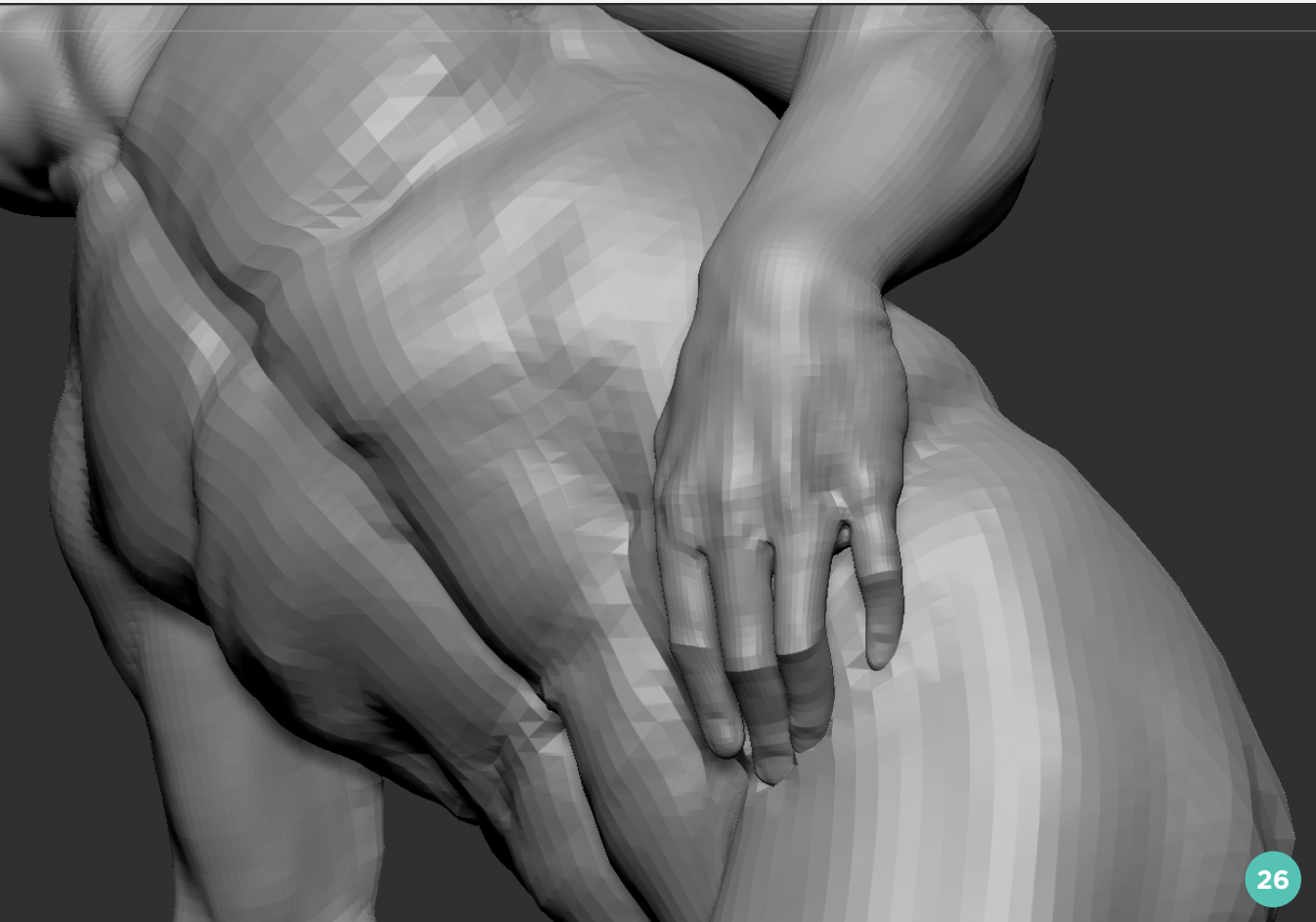
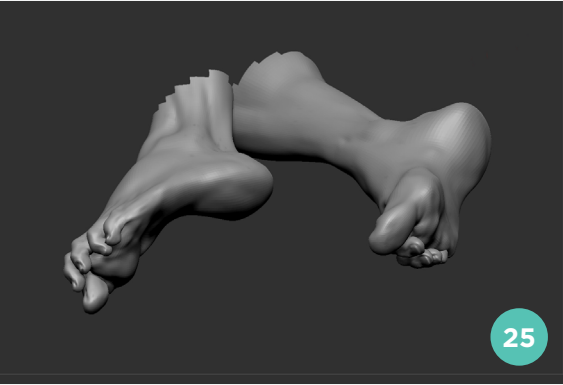
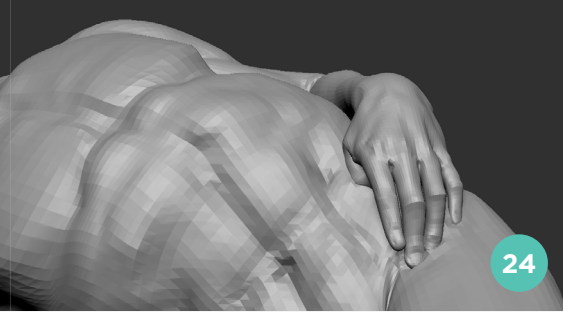
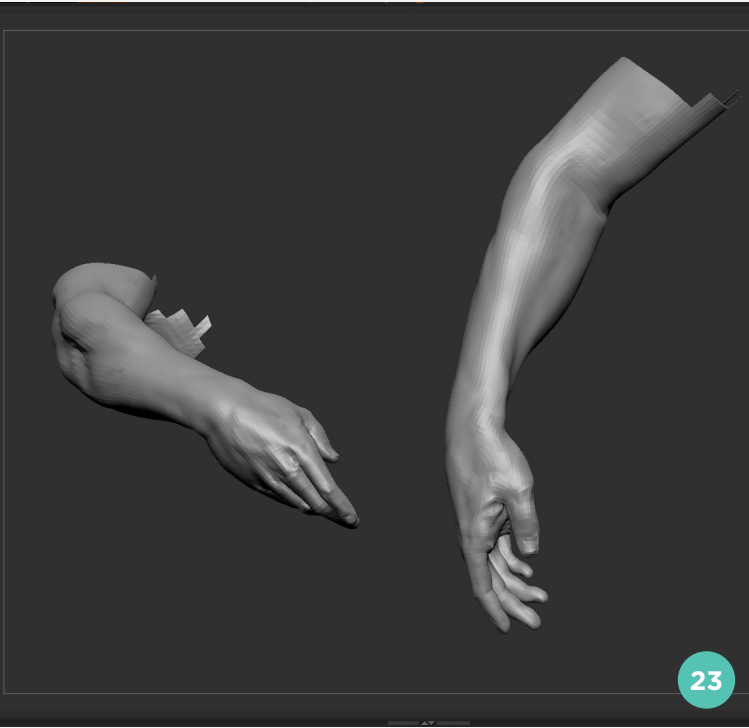


**TIP:** It is always important to fix the proportions and muscles when working with Transpose tool, because sometimes this tool changes the model a lot and we need to fix things at the same time. In the image we can see a lot of errors in the proportions caused by using Transpose – like the size of the chest, which is too stretched – so we need to fix these using the Move brush (20).

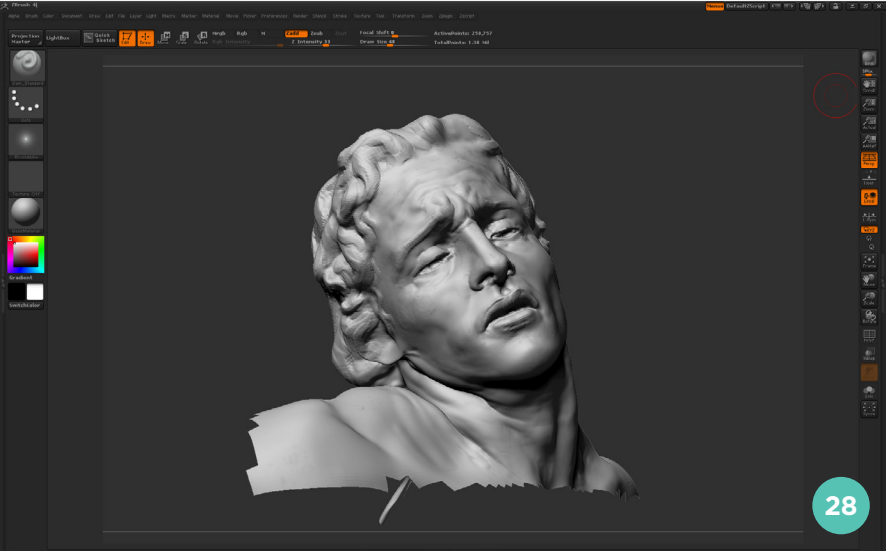
After that we start refining the pose, adding more drama in the arms and back, and flexing the legs a little (21 – 22). When every part is in place you can start to correct the pose of the hands and fingers (23 – 25). And then do the same thing to the feet. It's important to do these parts patiently (26).



20 – 26  
Slowly refine all the elements of the pose







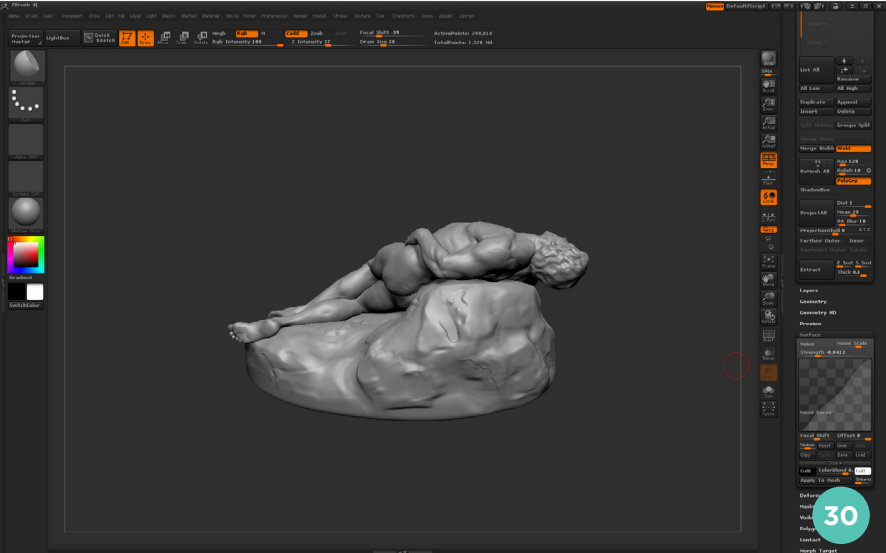
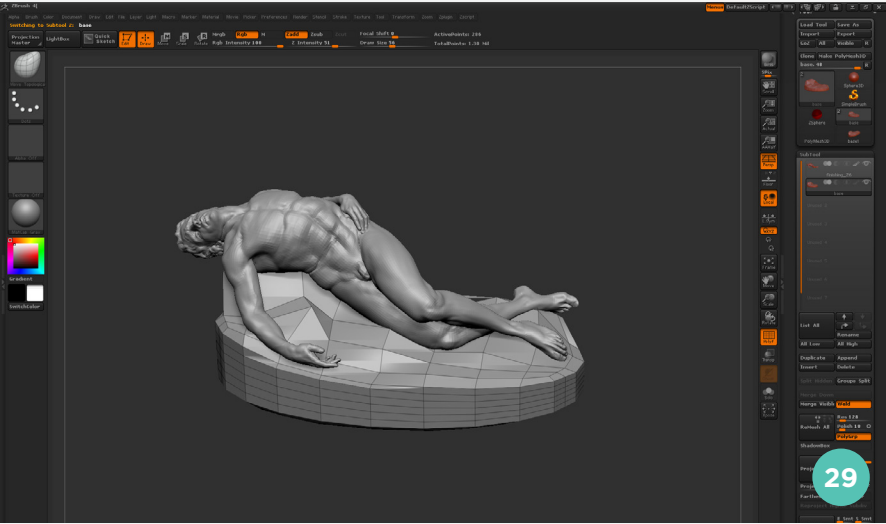
### Adding skin details

With your pose complete, it's time to finish the piece. Using the Clay brush, refine each element. Create the area where the skin compresses on the neck and back (27). Also, at this point you should continue to refine his face and expression, and work a little more on the hair (28). This part of the process is a little complicated and took some time to do, because we need to know how the skin behaves when pressed, and how the muscles work in that pose to improve the natural look.

### Creating the base and apple

Next it's time to create the base to your model. You should be asking: why didn't I do the base from the beginning? I didn't do this at the beginning because I didn't want to limit my pose to the base. I prefer to try to get the best pose I can without worrying about the shape of my base. So now we can build a base and fit it onto the model. To create this, we want to build a cylinder in another 3D package, bring it into ZBrush, and push it around using the Move brush to fit it to the model (29).

After you have done this start to work with the Clay brush and adjust things to add some volume. Then flatten these to make it look like a rock (30).



27  
Add skin details

28  
Improve wrinkle  
and face detail

29  
Add a base

30  
Refine the base



We can start to use the great Noise tool. This tool will help us a lot when creating the look of a rock. By playing with the curve and its strength you can create a good result (31).

Using the Planar we can create some flat areas in the middle of the rock (32).

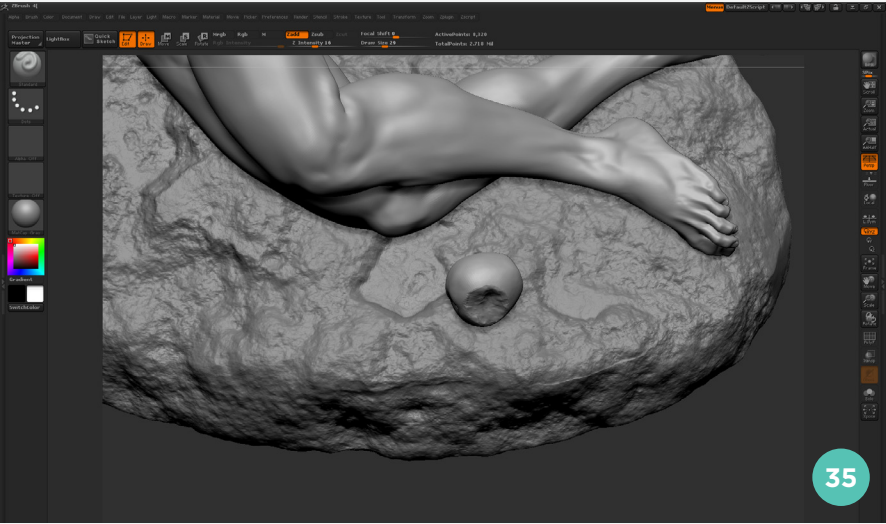
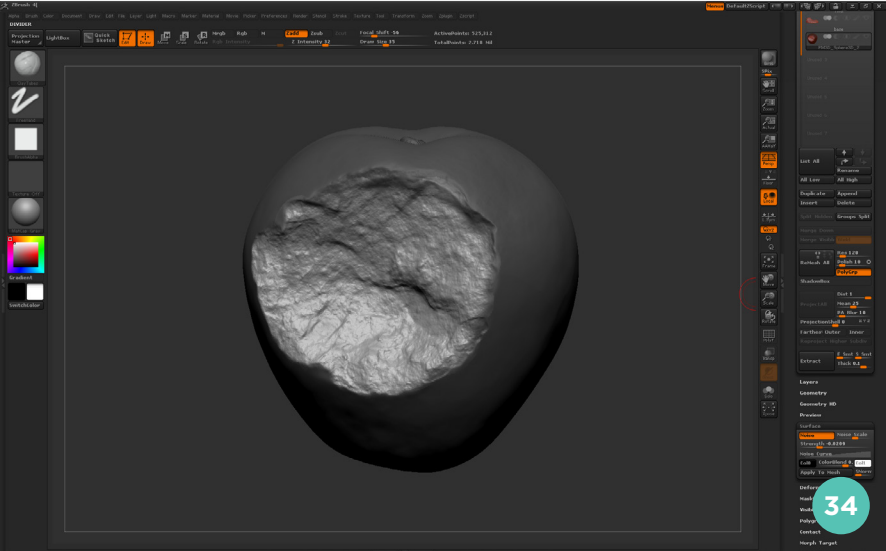
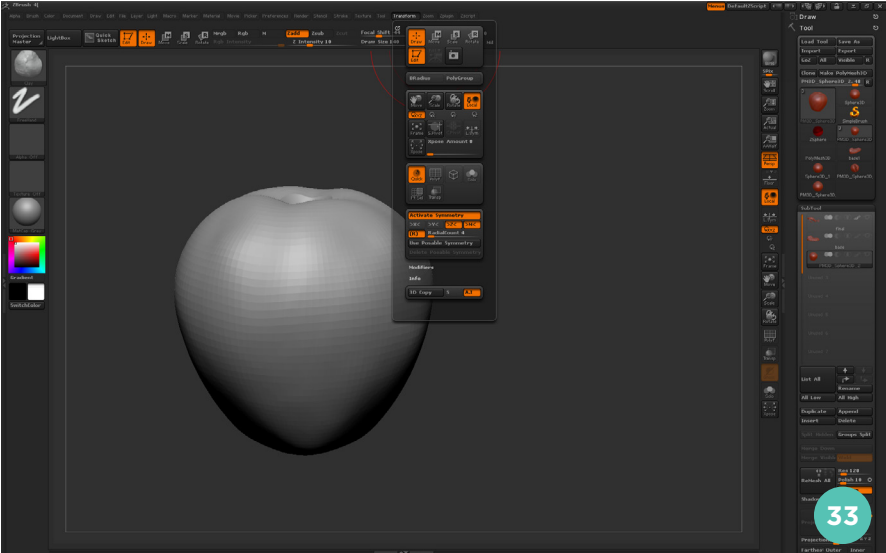
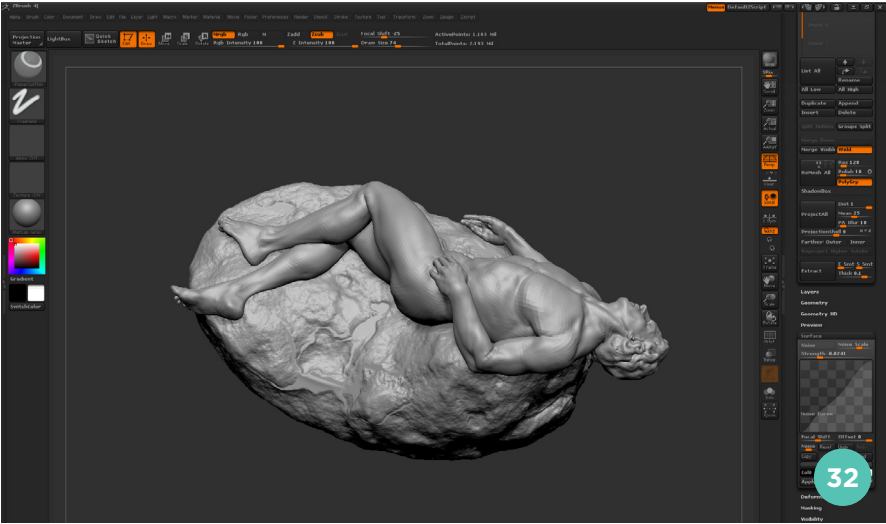
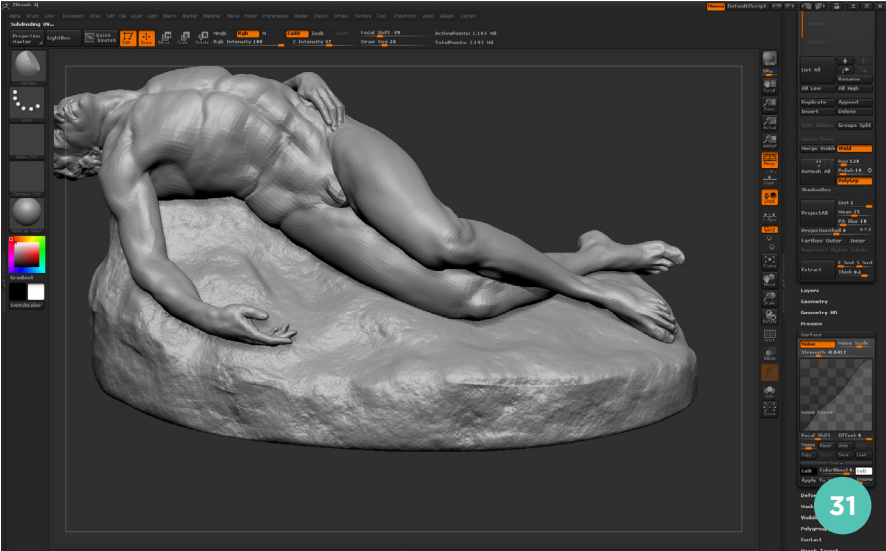
To finish our prop, get a simple sphere and use Radial symmetry to start creating the shape of the apple (33). With the basic shape sorted turn off the symmetry and bring some asymmetry to the apple.

To do the bite I used Claytubes and carved a hole; for the rest of the model the Clay brush will do the job. The only thing left to try to do is create some kind of teeth marks to create a little realism. Then I used the Noise tool to add a little more texture to the interior part of the apple.

This time we need to paint a mask on the external part to avoid the noise being applied to the whole apple. Then press "apply to mesh" to bake the noise to the polygons (34).

**Finishing the model**

Almost everything is finished, we only need to put the apple in its place (35). I decided to add some little veins to his arms, not too much just a subtle touch. We can do this using the Standard brush and then use Smooth to make some areas show up more than others (36).



31  
Use the Noise tool on the base

32  
Create flat areas with Planar

33  
Create the apple prop

34  
Add realism to the bitten apple

35  
Set the scene

36  
Add some final touches like veins





We can do more work with the Clay brush by adding some volumes to the skin, and use Inflat to compress the skin a little more against itself, for example by the fingers (37 – 38). And here we have our piece finished (39).

We can see how we don't need a hyper-detailed model to see great quality in our work. The beauty of this art is that it is in the form not in the details.

37 – 38  
Final touches

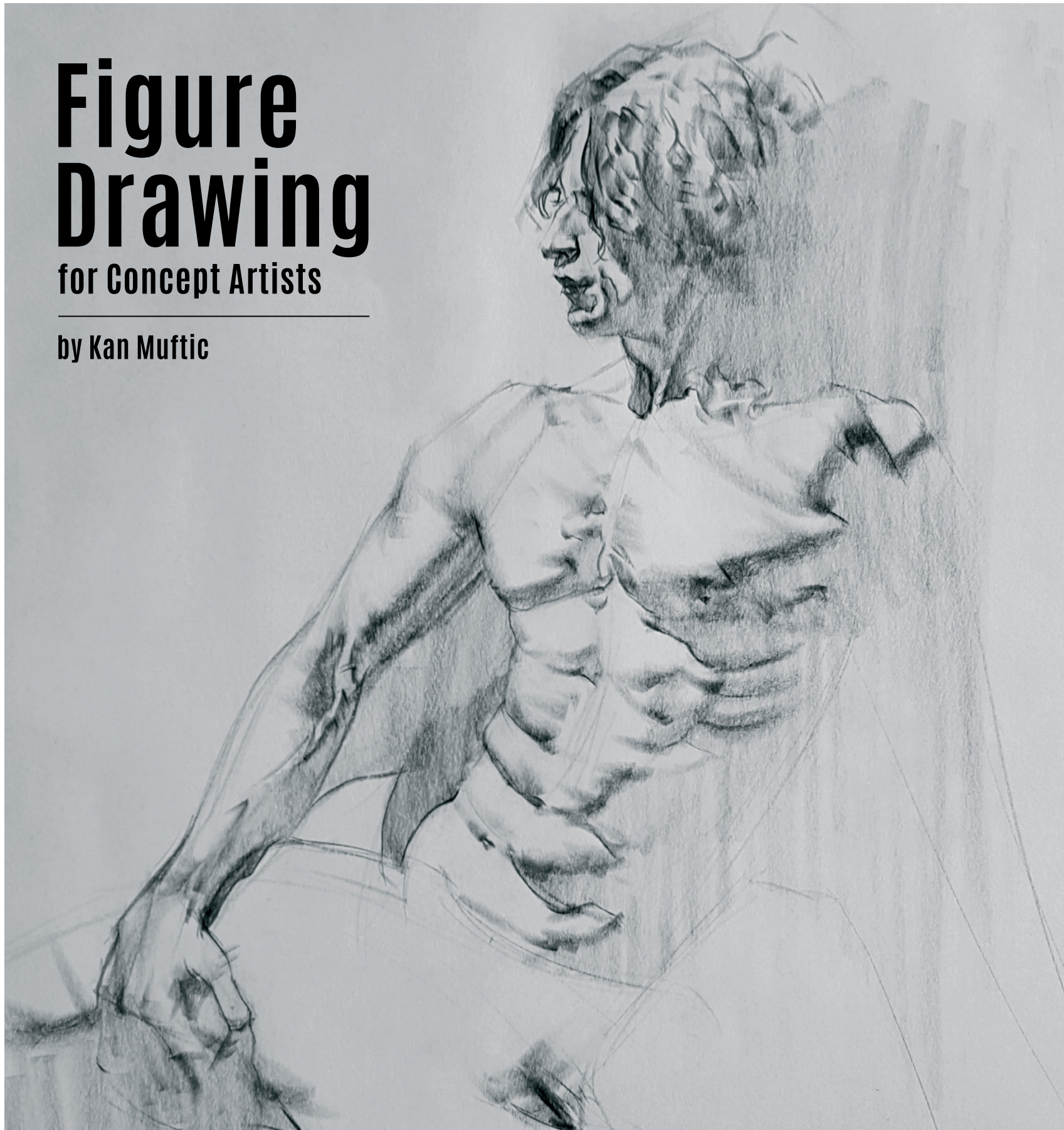
39  
Finished piece



# Figure Drawing

## for Concept Artists

by Kan Muftic

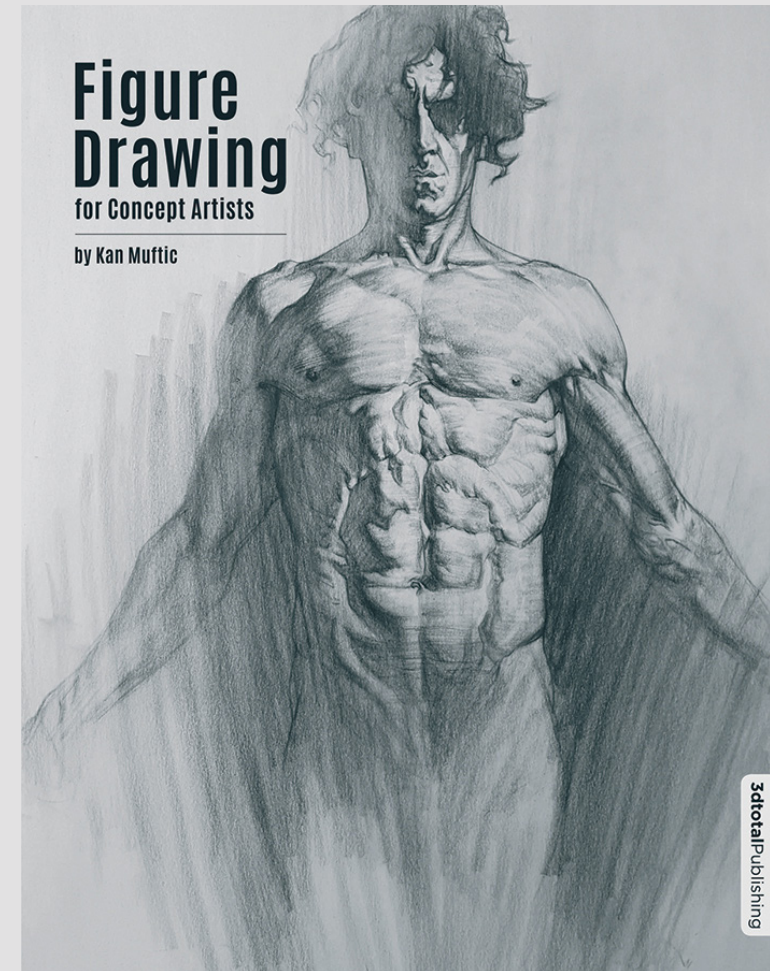


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# Figure Drawing

## for Concept Artists

by Kan Muftic



Accessibly written and lavishly illustrated by respected concept artist Kan Muftic, this book celebrates the common ground between traditional life drawing and the fast-paced world of the concept art industry. Learn about the skills, techniques, and mindset needed to make successful life drawings, how to capture the forms of the human body on paper, and how to improve your character and concept art with a dynamic approach to figures and anatomy. *Figure Drawing for Concept Artists* offers a unique, up-to-date perspective on classical skills, with the contemporary practitioner in mind.

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