

**Sculpting-Bible**

# SCULPTING FOR BEGINNERS

**PART I**

**TOBIAS DUDA**



**Sculpting-Bible**

**SCULPTING**

**FOR**

**BEGINNERS**

**BY TOBIAS DUDA**

© 2022 Tobias Duda

All contents of this book, in particular texts, photographs and graphics, are protected by copyright. Copyright is held by Tobias Duda, unless explicitly stated otherwise. Please ask me if you want to use the contents of this book.

Content published under the "Creative Commons" license, is marked as such. They may be used according to the stated license conditions.

Whoever violates the copyright (e.g. copies images or texts without permission), is liable to prosecution according to §§ 106 ff UrhG, will also be warned with costs and has to pay damages (§ 97 UrhG).

**[www.Clay-Sculpting.com](http://www.Clay-Sculpting.com)**

**[Follow me on Youtube](#)**

**[Follow me on Instagram](#)**



## About the author

---

My name is Tobias Duda. I was born in 1985 and have lived in Cologne since my birth. I am a trained businessman in wholesale and foreign trade and have studied business administration with a focus on marketing/communication. My main job is Online Marketing Manager and I feel at home on the internet. I discovered Sculpting and modeling at the end of 2019 and have been fascinated by the plastic arts ever since. When I'm not sculpting, I draw digitally on my iPad, exercise regularly, play video games or spend a quiet evening with my partner, friends and family. Just a normal guy.



# Foreword

Have you ever tried something completely new that you had absolutely no clue about up until that point, only to find that it becomes one of your biggest passions and hobbies in life? That's exactly what happened to me at the end of 2019, when my buddy Dominik took me to his study and I stood in front of a dozen of homemade action figures. Immediately, I was captivated and wanted to try my hand at sculpting a figure myself and then painting it.

So with the first package of Super Sculpey, I set to work on my first figure and was able to complete it with the help of Dominik's advice and some Youtube videos. I was totally hyped and from one day to the next several packages with all kinds of materials, tools and equipment arrived at my home. From polymer clay, brushes and acrylic paints, to instruments from the dental field, to the airbrush. I couldn't afford all of that at the time, but I wanted it so badly that I didn't care.

I knew right away that I had discovered something for myself here that I no longer wanted to do without in my life. But all beginnings are difficult: I had little experience and all the information available on the subject was mostly in English. So I spent weeks reading up on all the topics and in a knee-jerk reaction registered the website [www.clay-sculpting.com](http://www.clay-sculpting.com). Since the day of the registration this site grows parallel to my experience and I adapt and extend the contents again and again.

The creation of this book comes from my desire at the time to find the complete know-how and all the necessary information about sculpting & modeling bundled and easy to understand in one place. It should help people like you, who are interested in the topic, to quickly get into the subject and to answer all questions before they even arise. When I started modeling and painting figurines in 2019, I wished I had a reference book like this.

I hope this book gives you a good jump start into the world of modeling and answers all your questions. Have fun reading and trying it out!

# Acknowledgements

My special thanks go to Dominik, who virtually opened the door to the world of modeling for me and gave me my first package of Sculpey to try out. Without you, none of this would have happened. I would also like to thank my girlfriend, who always supports my work and is also a great support to me mentally. I'm sorry that sometimes I was completely mentally immersed in the world of modeling and you fell by the wayside. I thank my mom, who at times had to put up with my mess and all the figurines in the apartment (even though she probably didn't think it was that bad). And I thank everyone else who made me feel like I was doing the right thing at all times...namely, just doing my thing.

# Table of contents

<b>About the author</b>	<b>4</b>
<b>Foreword</b>	<b>5</b>
<b>Acknowledgements</b>	<b>6</b>
<b>Chapter I - Materials</b>	<b>9</b>
<b>Modeling clay</b>	<b>9</b>
Polymer Clay	10
2-Component-Epoxy	12
Oil-based Clay	13
<b>Modeling tools</b>	<b>14</b>
Dental-Tools	15
Modeling brushes / Colour Shaper	16
Loop-Tools	17
Pasta machine	18
Clay Extruder	19
Ball Stylus / Dotting Tools	20
Wire cutter	21
<b>Chapter II - The Armature</b>	<b>22</b>
<b>Components of the armature</b>	<b>23</b>
Wire	23
<b>The base</b>	<b>24</b>

<b>Practical part: Building the armature</b>	<b>25</b>
1. Base preparation	25
2. Cut wire	26
3. Wire bending	27
4. Reinforce armature	28
5. Reinforce the armature with epoxy	29
6. Pose the armature	30
<b>Chapter III - Sculpting a figure</b>	<b>32</b>
<b>Coming soon...</b>	<b>32</b>

# Chapter I - Materials

## Modeling clay

The most important material for modeling is the modeling clay. If you search the Internet for a suitable modeling clay, you will quickly notice that there are currently countless manufacturers and variants. These differ not only in simple things like color and consistency, but also in the way they are processed. Some are oil or wax-like, others are dry and crumbly, and others are sticky like chewing gum. Polymer clay modeling compounds are baked after processing and thus harden. This makes them resistant and durable. Modeling compounds such as epoxy, on the other hand, consist of 2 components, which can be processed for about 2-3 hours after mixing before they harden completely in the air. When cured, epoxy is even harder and more stable than polymer clay. Oil and wax-like clay is not baked, but heated in the microwave or oven before use. This gives it a creamy consistency like Nutella and makes it very easy to work with. After about ten to twenty minutes, the melted clay then slowly returns to its original consistency at room temperature and becomes harder without, however, hardening completely. This property makes it particularly beginner-friendly, as you can easily make corrections to the figure afterwards. The great advantage of oil-like clay is that you can melt it down as often as you like after use and start over again and again.

# Polymer Clay



The best known modeling clay is undoubtedly polymer clay. Most will know it as Fimo or Sulpey. It is a clay that has a similar consistency to, for example, plasticine. It is dry, has a matte surface, and can be molded, kneaded, and rolled into any shape with your hands. The longer you hold it in your warm hands and knead it, the softer and smoother it becomes and the easier it is to work with. Well-known artists like the Shiflet Brothers or Ace of Clay work very often with polymer clay and use it in almost every one of their figures. Polymer clay is very easy to work with tools such as dental tools, so you can end up with very fine details. Polymer clay is available in many different colors and hardnesses, some even fluorescent or with a glitter effect. Two special types of polymer clay should not go unmentioned here: Cosclay and BeeSPutTY. Cosclay has not been on the market for too long and has the special property that it hardens after baking, but remains completely flexible. This makes the figures particularly flexible and allows completely different design possibilities. For example, you can create figures and shapes that can be bent into a different pose afterwards. BeeSPutTY, on the other hand, has the property and consistency of oil-like clay but can be baked like

polymer clay. I prefer to work with Sculpey Medium. It is gray, takes details very well and is very easy to work with.

Polymer clay figures are baked in the oven at approx. 120-130° Celsius to harden. As a rule of thumb, about 25 minutes per 1 cm thickness. I bake my figures usually about 1 to one and a half hours at 120 ° degrees convection. You can also bake polymer clay several times, so that you can harden the figure in intermediate steps. This is helpful if, for example, you are finished with the lower body and don't want anything to break here in the further process.

**Tip 1:** Typical household ovens in Germany are about 35 cm high inside. Keep this in mind when building your figure! If the figure doesn't fit in the oven at the end, you'll have to bake it with a hot air dryer. This is very tedious and time consuming.

**Tip 2:** Let the figure cool for 1-2 hours with the oven closed. This will reduce the formation of cracks.

## 2-Component-Epoxy



Epoxy usually consists of 2 components, which are mixed in a ratio of 1:1 until they form a uniform mass. Immediately after mixing the two components, the epoxy is still very sticky and can be used at most for rough work such as creating the basic shape or building a fitting. However, if you let it sit for 20-30 minutes and only then get started, you will have a similar experience to polymer clay. Since epoxy hardens relatively quickly, you should take this into account when doing your projects. After mixing, a chemical reaction sets in motion so that it starts to become noticeably firmer after about 2-3 hours. If you don't work quickly or are still unsure and need a little longer to model, you are probably not so well advised to use epoxy for the time being. I often use epoxy to build and stabilize my armatures or to model improvements and details on the figure afterwards. I've tried a few types of epoxy, but Aves Apoxie Sculpt and Miliput have been the best for me so far in terms of consistency and workability.



# Oil-based Clay



Oil-based clay, such as Monster Clay or Chavant NSP, behaves significantly differently than other types of clay, both in preparation and in processing and finishing. It is oil- and wax-like and thus has a smooth, and shiny surface. By default, the clay comes in brown, but now green or gray versions are also available on the market. Oil-based clay is heated in the microwave or oven before use, making it soft and malleable. After modeling, there is no way to harden it long-term. When it cools, it takes on the hardness it had before heating. This makes oil-based clay rather less suitable for building long-lasting figures, but instead more suitable for creating silicone impression molds. Because the clay can be reheated and melted down again and again, it can be used as often as desired, making it ideal for practicing or teaching. Well known artists like Simon Lee aka Zero Spider or Dr.Garuda work mainly with oil based clays and even paint them with acrylics afterwards. Should you live in a place where it is hotter than 40° degrees, I recommend that you do not put the figures in the sun afterwards. They are literally melting.

# Modeling tools

When modeling with clay, your own hands are the most important tool. Many shapes can be modeled and created well in advance. Especially when it comes to working out basic shapes (English: blocking), your own hands still do the best and fastest work. But when it comes to details, you very quickly reach your limits. The smaller the scale in which you model, the more difficult it becomes to work out fine details and shapes with your hands or fingers. This is where more or less special tools come into play, ranging from simple household items such as a toothpick to professional tools, e.g. from the dental field. There is nothing wrong with getting to grips with a wide variety of tools and trying them out. In the beginning, it's really a bit of trial and error until you find the right tools for you. I use a set of about 15 different tools in my work, with which I can usually implement everything. The choice of tools also depends on the modeling clay that you use. Tools made of metal are much better suited for modeling with oil-based clay or epoxy than tools made of wood, for example, because of their smooth surface. Due to the rough and absorbent surface of wood, these types of clay literally stick to the tool, so that you often have to clean it in between and remove any residue. The following list of tools should be available to anyone who seriously deals with the topic.



# Dental-Tools



Dental tools, as the name suggests, are actually used in the dental field. Anyone who has ever been to the dentist has already seen such a tool. These tools are made of steel and come in many different shapes and varieties. They usually have a fine tip that can be used to work very accurately. When modeling, you will probably use these tools very often, so a mixed set with different variants is worthwhile here. They are very suitable for creating fine details such as scars or skin folds.

## Modeling brushes / Colour Shaper



Modeling brushes look like ordinary pencils, but the tip of these "brushes" is made of soft silicone and is therefore flexible and pliable. They come in different varieties and sizes that are suitable for different types of work. I use modeling brushes very often for the transitions of clay pieces (blending), which is why it is one of the most important tools for me. For my 1:6 scale figures, I use modeling brushes with an extra small pointed head. On the internet you can find complete sets containing different modeling brushes for relatively little money.

# Loop-Tools



Loop-Tools are often used when working with oil-based clays such as Monster Clay. They are ideal for working on and removing the surface. The tool is used to scrape over the clay, removing layer after layer and working details into the modeling clay. They come in many different shapes and sizes. Some artists create their own loops by bending a piece of guitar side and connecting it to a pin or hollow hand piece.

# Pasta machine



It may probably seem strange at first glance, but the pasta machine is very often used in modeling. The pasta machine can be used not only to roll the clay softly, but also to create smooth and flat "plates" of clay. The pasta machine can be set to a fixed thickness and then produces consistent results from a few millimeters to several centimeters thick slabs of clay. I use the noodle machine a lot when, for example, I'm modeling clothing like a cape or I want to completely cover the base with a thin and consistent layer of clay.



# Clay Extruder



The function of the clay extruder is somewhat reminiscent of the piping bags with which grandma used to conjure up such delicious cakes. Here, the clay is placed in the extruder and usually pressed through one of the various molds by a crank function. The result is then thin or thick strands of clay that come out the front in triangular shapes, strips or squares. Very handy for creating things like belts, hair, or other elongated shapes. The extruder often has a dozen different shapes in front of it, so you have some options here.

## Ball Stylus / Dotting Tools



Dotting tools also look like pins, but usually have a metal ball on both sides as a head, with which perfectly spherical holes can be pressed into the clay. I use these tools to poke small details like belt holes. Since these jobs can be done with other tools, dotting tools are probably not essential. But since these are also available inexpensively as a set I always say "having is better than needing!".



# Wire cutter



The wire cutter should be familiar to everyone. They are robust scissors with which the wire is cut. Wire cutters are available in various designs and some are only suitable for certain wire thicknesses. You can find them in any hardware store for little money.

**Important:** Please do not get the idea to use household scissors or even a knife to cut wire. These are not suitable for this and can be broken. In the worst case, there is even a risk of injury! In general, you should watch out for flying pieces of wire when cutting wire. If you want to be on the safe side, wear protective goggles when cutting. Otherwise, the whole thing can literally "go in the eye".

# Chapter II - The Armature

The basis and skeleton of a professional figure is the armature. You can think of an armature as a human skeleton that supports muscles and joints: the wire is the skeleton and the modeling clay that you put on it resembles muscles and flesh. So the armature has the task of supporting the modeling clay and at the same time giving life to the figure by imitating a certain posture. The larger the figure you want to model, the more important it is to have a stable armature. If you take it easy and do without it, you risk the figure buckling under the weight of the modeling clay during the process, and then all your work will have been for nothing. Many people forget that polymer clay temporarily softens during baking. The danger here is very great that the figure then simply falls over in the oven and parts of it bend and/or break off.



# Components of the armature

## Wire



The main component of an armature is wire. Theoretically, you can use all kinds of wire, but you should always consider the size and weight of the figure. I usually build on a scale of 1:6, which means that a person who is 180cm tall in real life will be about 30cm tall as a figure. In this scale you need about 2 packages of polymer clay for one figure. Here an aluminum wire in 3mm thickness is sufficient. If you want to build in a larger scale like 1:4, the figures would already be 45cm tall and weigh almost twice as much. Aluminum wire is too weak here. In this case, iron wire is the better choice, as it does not yield as easily and is more stable. For additional stability and so that the modeling clay holds better on the wire, wrap the 3mm wire additionally with a thinner wire in 0.5mm thickness.

**Tip:** If you want to save modeling clay or reduce the weight of the final figure, you can additionally wrap the armature with aluminum foil.

# The base



In order for the wire armature to have a safe and firm stand, it needs a base. The base is usually nothing more than a block of wood in which you drill holes and insert the armature. Depending on how deep you drill the holes, this should be taken into account in the wire length and at the legs of the wire left a little longer. Wooden blocks come in different shapes, sizes and thicknesses. If you google "shell blank" you will find some stores that offer them cheaply. For 1:6 scale figures, a diameter of 15cm with a thickness of 5-6cm is suitable. Shell blanks not only provide support for the armature, they are also perfect for building a diorama. But more about this later.

# Practical part: Building the armature

The following specifications apply to a figure in 1:6 scale, i.e. a height of approx. 30 centimeters.

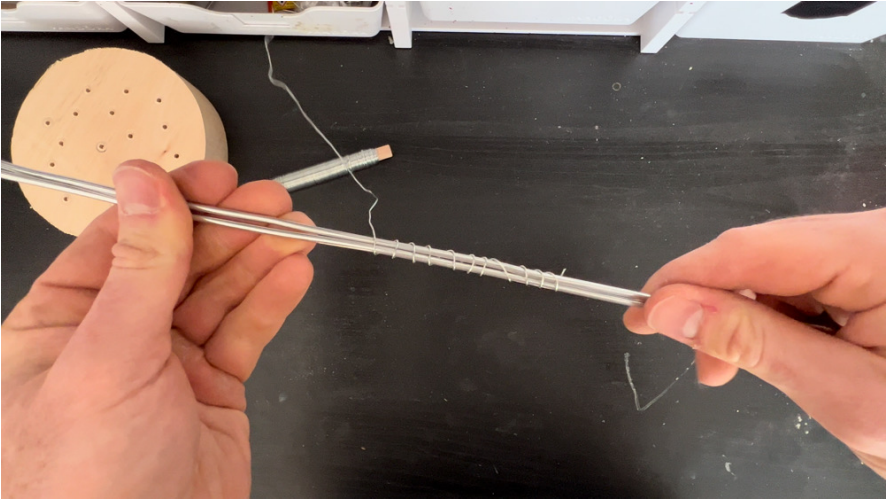
## 1. Base preparation



The first step is to prepare the base. To do this, we drill holes in the wooden base with a drill. Since we do not yet know exactly which pose our armature should take, we drill 10-20 holes at different distances in the base. The exact positions of the holes are secondary for now. The more holes you drill, the more flexible you are in the placement of the wire afterwards.

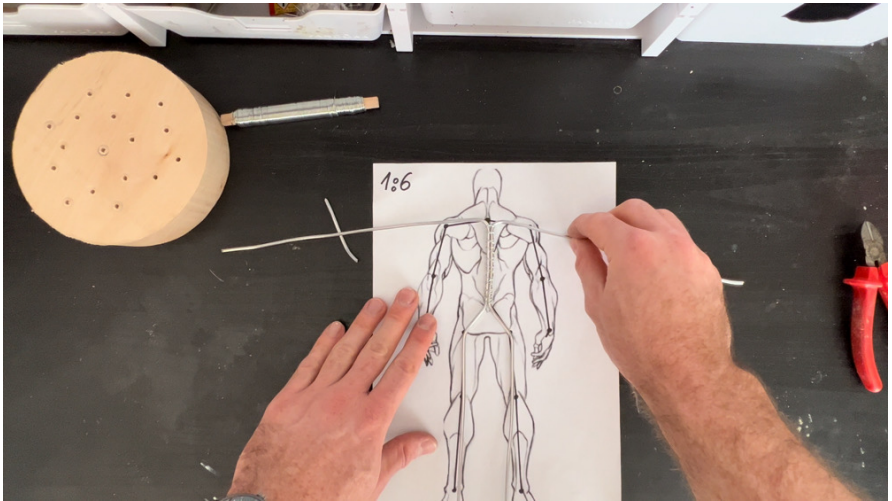


## 2. Cut wire



Next, we need a good meter of aluminum wire. To do this, we unwind it from the coil and cut it to the appropriate length. We bend the new piece of wire so that the two ends are at the same height and clip it once. Now we should have two pieces of wire of about the same length in our hands. The two pieces of wire are now joined together using the 0.5mm aluminum wire by wrapping it very tightly around the wire at the level of the center. This area will later represent the torso. It goes approximately from the hips up to the shoulders.

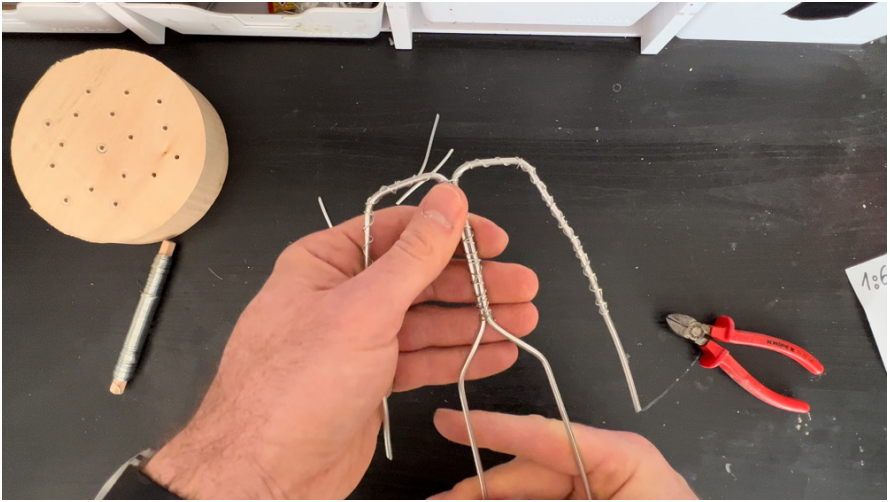
### 3. Wire bending



We should now have two pieces of wire of equal length in our hands, which are connected by a thinner wire in the middle. Now there are two ways to bend the wire: by experience or with the help of a template. I always recommend the second option, as it is safer and more accurate. I have enclosed an appropriate template for you.

To bend the wire into the right position, we place it on the template and bend it where concise joints are located: at the level of the shoulder and in the area of the hip. The armature should now slowly take on the shape of a human being. To make your work easier, use a waterproof felt-tip pen to draw in the other joints at the elbow, wrist, knee and ankle. Now you can take the wire from the template again and have the basic structure of your armature, so to speak. Since humans have an S-shaped spine, you can bend the armature in the area of the spine into the desired shape.

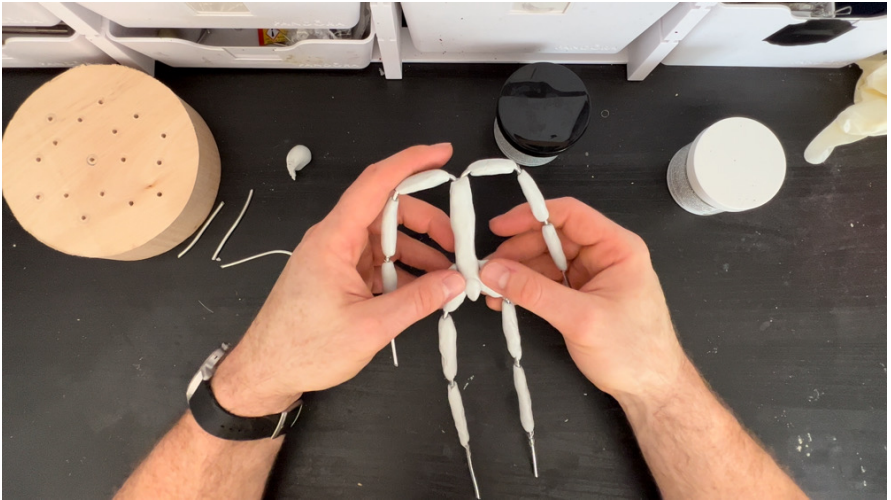
## 4. Reinforce armature



As I mentioned above, we wrap the armature once again with an additional 0.5mm aluminum wire. This gives the armature even more stability and the clay adheres better to the wire later.



## 5. Reinforce the armature with epoxy



This step is optional, but I can only advise everyone to do it. On the one hand, we benefit from an even more stable armature and on the other hand, it makes it easier to model the figure later.

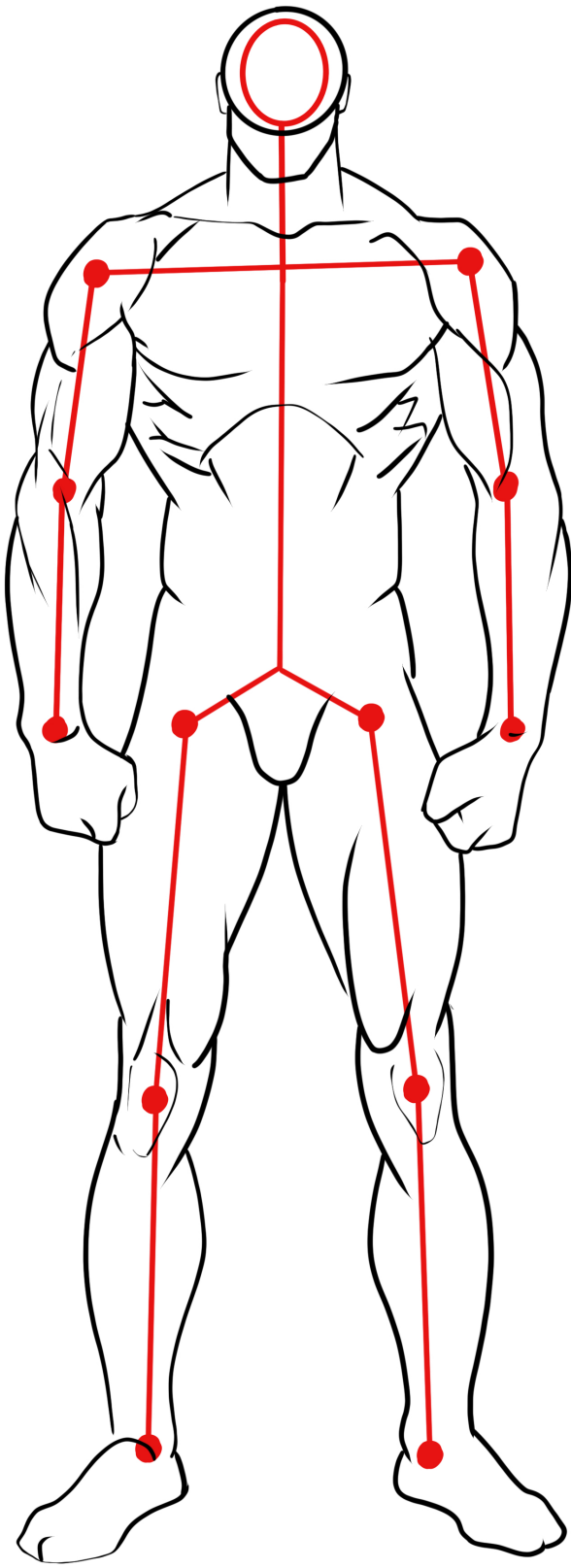
To do this, we mix epoxy in a ratio of 1:1 to a mass about the size of a golf ball and apply it to the armature. We leave out the epoxy at the joints so that we can still bend the armature later. Important are: Torso, upper and lower arms, upper and lower legs, as well as parts of the shoulder. In the last step, I place a small piece in the area between the shoulders. Then I take a piece of 3mm wire and press a small hole into it, just deep enough for the wire to be inserted later and hold by itself. This is where the head will sit later, for which we take a little epoxy and shape it to the size of a grape. We put the ball on a piece of 3mm wire, which we cut from our wire spool before. Now we let the whole thing cure for about 4-5 hours before we go on.

## 6. Pose the armature



After we have built the armature out of wire and applied the epoxy and given it enough time to cure, it is time to place the armature in the base and bend it into the desired pose. At this point, the previously marked joints will help us: when you put the armature into the pre-drilled holes, the marks on the ankles should still stick out a little bit from the wooden base. We now insert the previously created head into the hole in the neck area. If the wire or neck is still too long, that's perfectly fine. We'll take care of that later. Now you can start bending the armature into the pose you want and try your hand at it. For reference on natural human poses, you can refer to pictures from the internet. Be sure to bend the figure only in the places where you have previously drawn in the joints.

Congratulations, you have built your first armature!



# Chapter III - Sculpting a figure

**Coming soon...**