Contents

The Why of Sketching
Draw like a professional and you will be a professional.

Some people make rough, fast, nonchalant sketches and they look brilliant. For others, it takes hours of blood, sweat and tears to produce drawings that are accurate yet still look unprofessional. The question is why?

As a lecturer in cognitive ergonomics at the Rotterdam University of Applied Sciences, I consider human reactions to visual information, and I also teach sketching. So I thought that if I could analyze and describe how our mind reacts to different aspects of handmade sketches, I would be able to teach drawing skills much more easily.
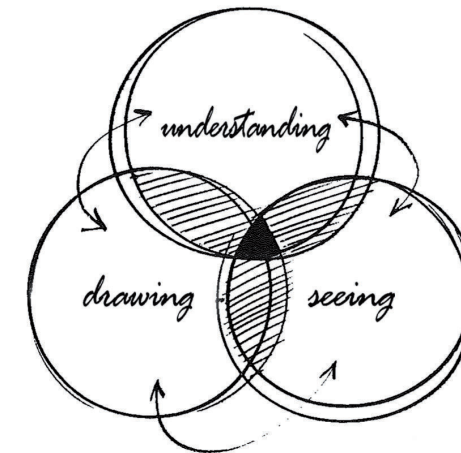
Sometimes I meet an 'old school' teacher of sketching whose main aim is to teach people to draw accurately. I am convinced that this traditional way of learning to draw is fundamentally wrong, because even if people learn to draw accurately, their drawings do not convince. That frustrates people and makes them avoid drawing altogether instead of practising their craft. Fear and uncertainty is then visible in all their work, and they fail to improve.

Salvador Dalí, the famous Spanish painter, once said: "If you act like a genius you will be a genius!" This is especially true when it comes to sketching.

I believe that you must first learn how to make your drawings look like they are the work of a professional and leave the matter of accuracy for later. If you do so, then all your drawings will look professional, whether they are accurate or not. You will achieve much more success even after a few drawing sessions, and things can only improve.

People who cannot draw well usually think that professional sketching is a complex and difficult process. But after reading this book you will find out that even the most complex sketches are just a structure of very simple but confidentially drawn segments layered on top of one another.

In this book I will simply show which features make drawings look professional, and why. You will learn that sketching is more about understanding human reactions to drawings than about mastering techniques or possessing any special skill or talent.

This book will not discuss themes like perspective or how to construct accurate drawings. Nor will it provide details about applying various techniques. Lots of excellent books about such matters are already available. This book is about the 'the why' of sketching. Why do professional sketches look beautiful?

The line
The line is where it all begins.

The line is the most important element. It's what lends your drawing its fundamental character. Some good lines are all you need to produce a beautiful drawing. By definition, a line is a geometric figure formed by a point moving along a path in a two- or three-dimensional space. It can be straight or curved. Lines have a uniform thickness and variable curvature. The best way to create them is with a computer, as I did here:
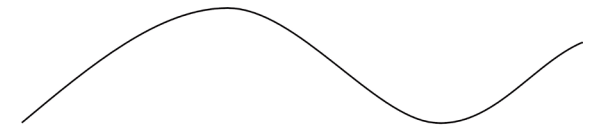
These lines are perfect, but they have fewer characteristics than hand-drawn lines. That is why, despite their perfection, they are quite boring. They don't look like something made by a creative mind or with special skill.

Lines that are drawn by humans have much more character. They have personality and are much more alive. They can express creative skill and craftsmanship, and they have a lot more attributes like variable thickness and accuracy, and dynamic features like smoothness, speediness, easiness, fluency and so on. That is why computer software like SketchBook Pro from Autodesk tries to imitate handmade drawings.

Complex curves
Construction of multiple simple sections.

Of course, you cannot draw very long lines with complex curves as fast as you should to make it look dynamic and smooth. What then? Simply build it up from a set of simple segments that you can draw easily. If all segments are drawn well, the whole line structure will look good. Besides, your drawing will also acquire a beautiful sense of rhythm.

This complex organic contour line of a tree is constructed from a set of very simple elements. It would be impossible to draw it by hand as one single dynamic line.

# Drawing slowly yet fluently?
The Zen moment of drawing.

If you look at the work of traditional Japanese artists, you see that they can draw or paint very slowly yet beautifully. With a lot of practice, it is possible to learn how to draw slowly, but still very fluently. It is something that you cannot force. It is more like a meditative activity, when you concentrate on relaxing the muscles in your arm and just let the movement of your hand flow.

Marker techniques
How to use markers.

Marker techniques are the easiest way to 'fill line drawings with material'. There are only a few things you need to know about the techniques.
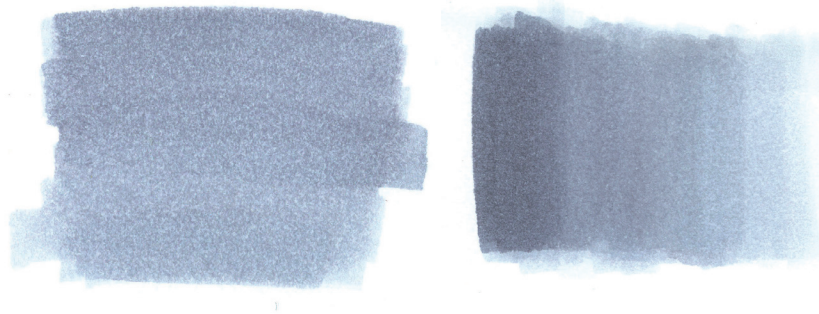
If you want an area with perfectly consistent colour, you have to 'paint' the surface over and over until the ink makes the paper equally wet everywhere. You have to concentrate on keeping the surface wet and go back to places where it has dried until the whole surface is covered. Then you stop and let the paper dry. If you do so, you will get a surface of perfectly consistent colour. It is easier if you use special marker paper because it is impregnated and therefore does not suck the ink out of the marker like conventional paper does. Besides, it dries much faster.

When the paper is wet you can pick a darker tone and make some areas darker if you wish. Then you can pick the lighter tone again and 'paint' back and forth over the line between the light and dark areas. If you keep the paper wet and do it carefully, you can make the transition between light and dark very smooth. When finished, you simply let the paper dry.

Another technique is to 'draw' with stripes. You just colour without caring about the fact that you see the stripes. If you do this well, your drawing will have a good structure.

When a layer is dry, you can start a second, darker layer. If you use the same colour, it will be just slightly darker, and then you can let it dry again. If you want to make it even darker, a third layer with the same colour usually doesn't have enough effect. You need a slightly darker tone for each following layer until you achieve the desired result.
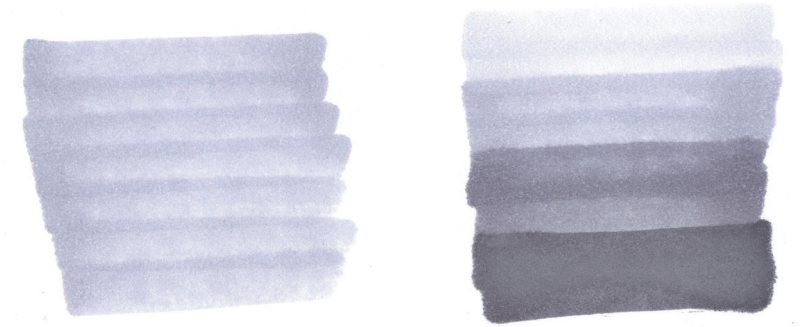
It is also possible to make more grey layers for the transitions and cover it all in the end with a colour. Then you can make different tones of a colour with only one colour marker.
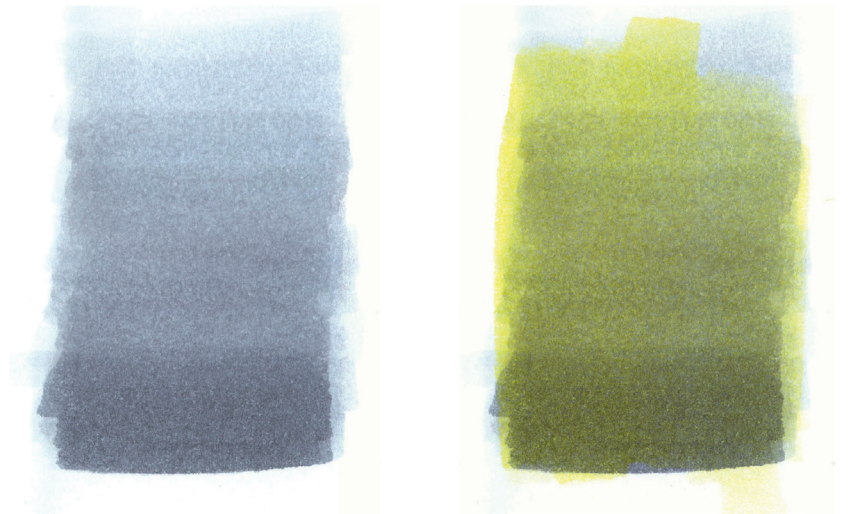
Good lighting concepts
Objects with curved surfaces.

An object with curved surfaces doesn't really have sides. In this case, we use reflections to make the drawing look more three-dimensional. You can use light reflections on dark surfaces and dark reflections on light surfaces. The most important aspect is the reflection line, which marks the 'edge' of the reflections.

Imagine a wire-frame model of an object drawn with 3D computer software. The lines of the wire-frame model communicate the form of the three-dimensional object to your brain at different sections. You get extra information about the three-dimensional form, enhancing your three-dimensional experience.
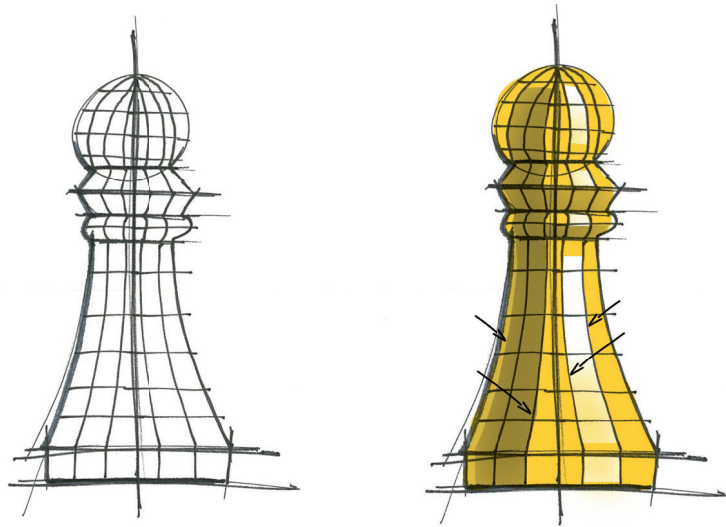
1) The lines of the wire-frame tell your brain the three-dimensional form at different cross sections. 2) The edges of light and dark reflections will more or less follow these wire-frame lines.

In reality, if you place light and dark boards around the object, you will get light and dark reflection lines that broadly follow an imaginary 3D wire-frame. These reflection lines 'tell' your brain the form of the cross section of the object in different places, just as the wire-frame did, only more beautifully.

Good lighting concepts
Three steps to create reflections.

If you show a sketch with reflections and a sketch without reflections to people, they will say that the one with reflections looks more beautiful. This has nothing to do with aesthetics. They find it more beautiful simply because their brain receives more three-dimensional information about the form of the represented object.
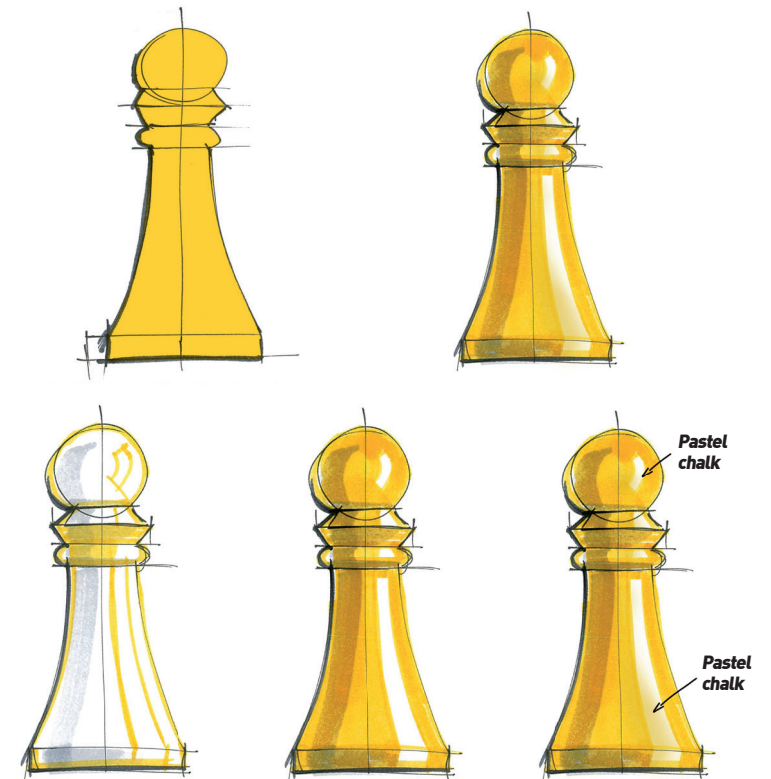
1) Without reflections, the drawing is nothing more than a boring flat plane of colour. 2) The reflection of a white object on the right and a dark object on the left is enough to create a sense of three dimensions. 3) Paint the dark reflection with a grey marker on the left, and define the border of the light reflection on the right. 4) Cover everything with the colour of the object, except the white reflection. 5) You can soften the white reflections with some pastel chalk.

Good lighting concepts
The composition of reflections.

For a good sketch, it is important to determine the right amount and position of reflections. You have to decide how wide the light and dark reflections should be, and where these reflections should begin and end. Light and shadow must be balanced. That means balancing the specific proportions that support the sense of three dimensions in the most effective manner. Here are some good and bad examples.

1) This is a good composition of reflections. It is asymmetric, so there is a logical light and shadow side. The widths of the different areas are well balanced. 2) Here you can see large, monotone, grey surfaces with reflections that are much too sharp and much too thin. 3) If the light is in the middle, it is difficult to understand what happens. Both sides are shadow sides, and it is unnaturally symmetric.

Good lighting concepts
Reflections on complex surfaces.

The point is not using the technique, but to figure out where the reflection lines should be. It actually shouldn't be called marker technique but, instead, lighting technique. If you can imagine what a 3D wire-frame would look like, it is easy to 'design' a nice composition of light and dark areas and smooth transitions by following some lines of the wire-frame.

Reflection edges fit on surface curves

Reflection edges fit on surface curves
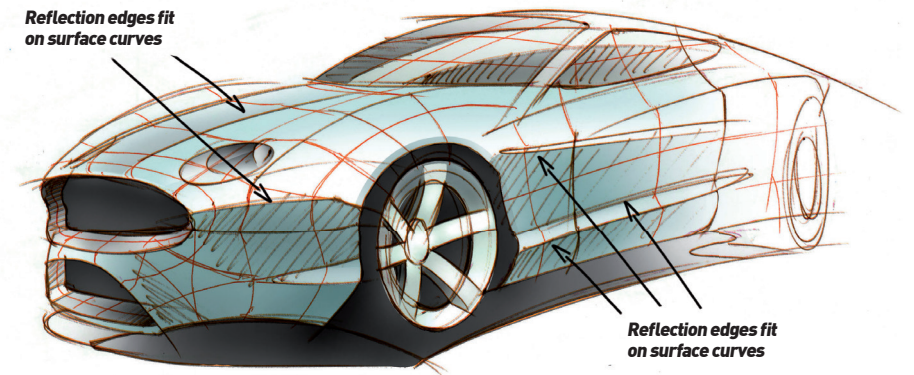
When a photographer wants to take some beautiful shots of a car, he has to build up a whole scene with light and dark boards to create the desired lighting effect on the surface of the car. The advantage of sketching is that you can simply put the lines wherever you need them. From that point of view, sketching is even much better than computer rendering, where you have to model the same surrounding scene that the photographer would use to get the same beautiful reflections.
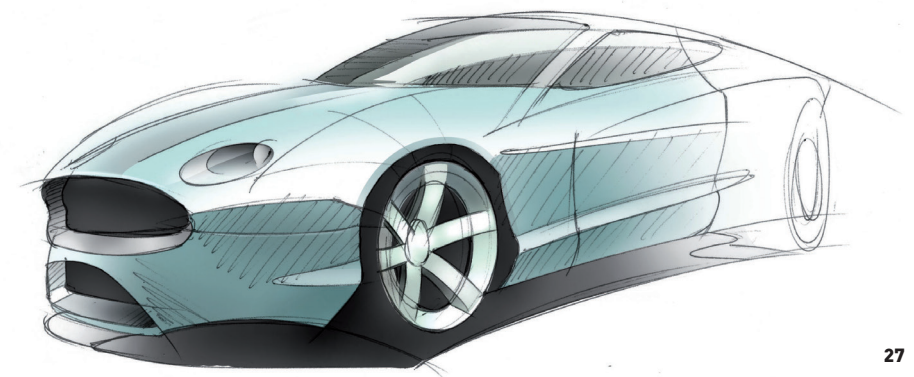
Finishing
Soft transitions

If you want to make really fine sketches, you can use pastel chalk to soften some areas of the light reflections. In reality, only small areas of the white reflections are bright white, and there are always some smooth transitions towards the colour of the object. If you decide to use a transition, it is very important to create space for it, so the white area has to be wide enough. Furthermore, you have to be very careful with the colour of the chalk. It has to be exactly the same tone as the colour of the marker. If you use orange for example, it can be a bit yellowish, or a tone that is closer to red. It's not a big problem if your chalk is a little lighter than the marker, but if, for example, you use a yellowish-orange chalk with a reddish-orange marker, the result will look very bad because you will always see the difference.

100% bright area

Smoothened with pastel chalk
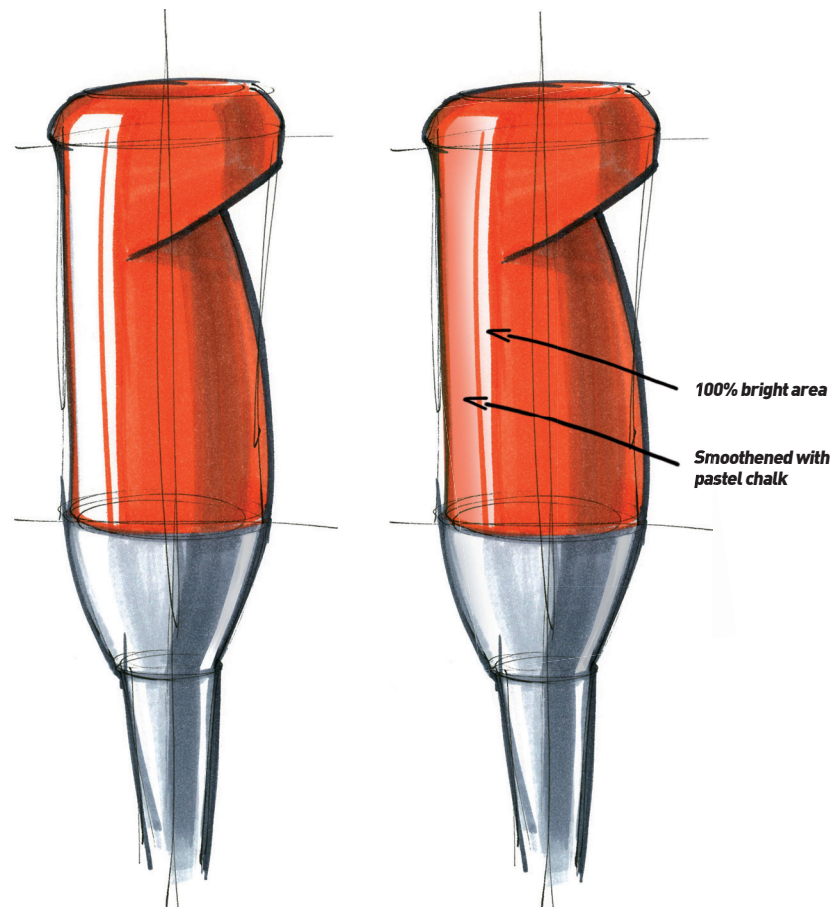
Finishing
Fine edges

In reality, finely rounded edges always get some edge light or edge shadow, which can be created with a white pastel pencil or a half-transparent white lacquer pen. These fine roundings also occur where different product parts join together. Usually the top edge of the lower part receives some edge lighting, and the bottom edge of the upper part receives some edge shadow. Edge lighting is always brightest on the side of the light source and fades away slightly towards the side in shadow.

Brightest area of edge light

Edge light fading

Edge light

*Edge shadow*

Edge light

Edge shadow

Edge light
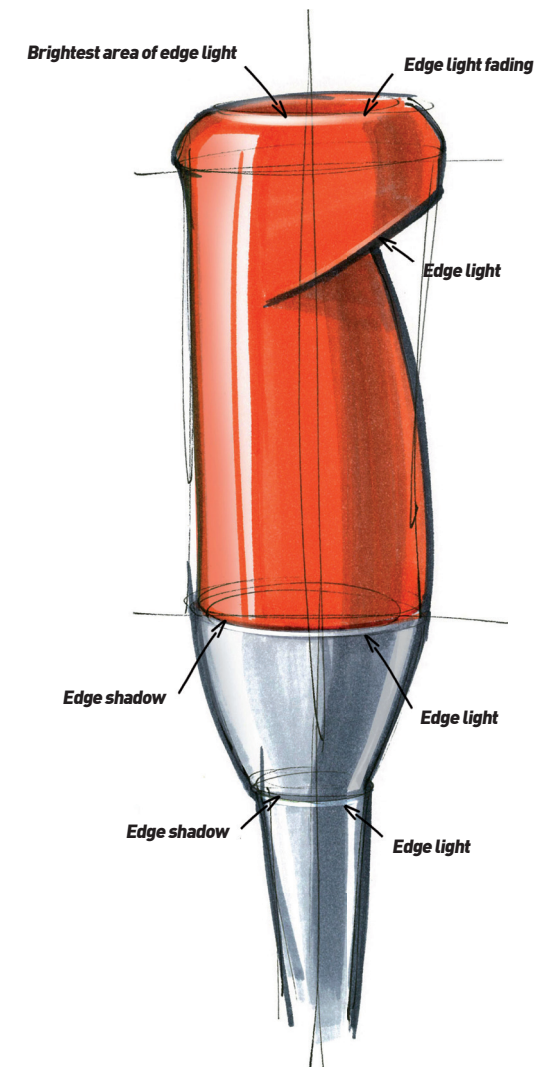
to create highly detailed photo-realistic handmade renderings. In fact, you can keep sketching and marker techniques extremely simple.

Instead of complicated shading, you can leave most surfaces simply bright white, adding just a little grey tone to the dark areas. This is a great way to make simple and fresh sketches in seconds. You can add a wider band of grey reflection on one side and a slightly thinner one on the other side. That's all. It's like a white product in a white room with dark reflections. If you have a white product, you cannot make light reflections, because you won't see them. The only way to make a white product visible is to use dark reflections.

Less is more
Examples of minimalist shading.
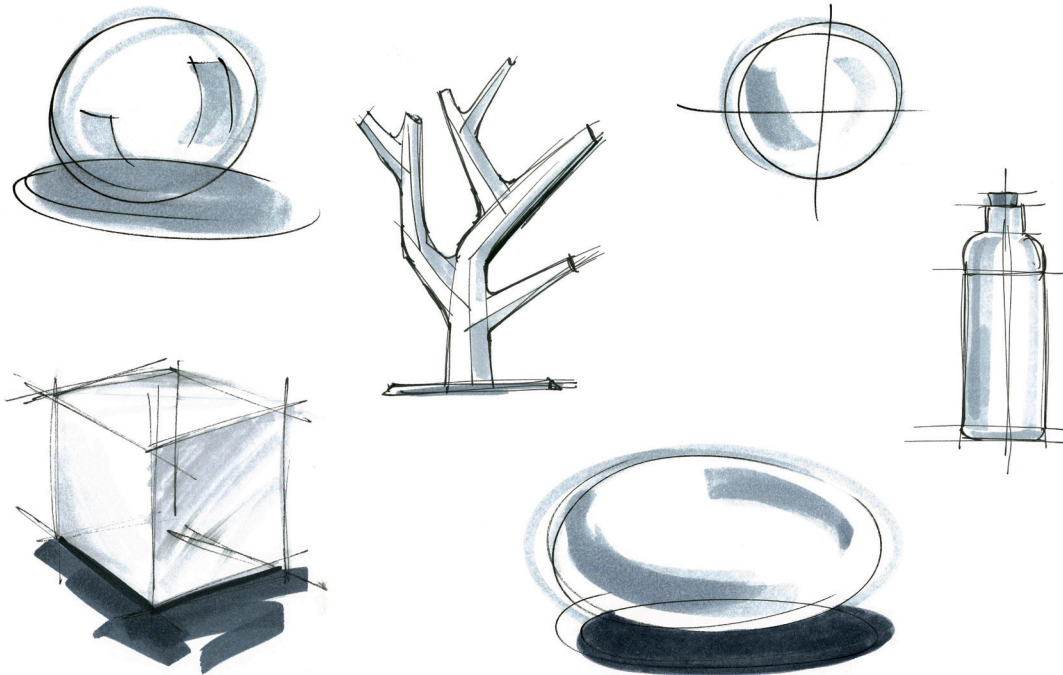
Less is more
Without markers.

You can even put the marker aside and use some hatch pattern for the shaded sections. By using variable pen pressure, you can even simulate shaded transitions. This works best with a ballpoint pen because it doesn't give a uniform line thickness like a fineliner. You can make very light construction lines and hard edges with the same instrument.
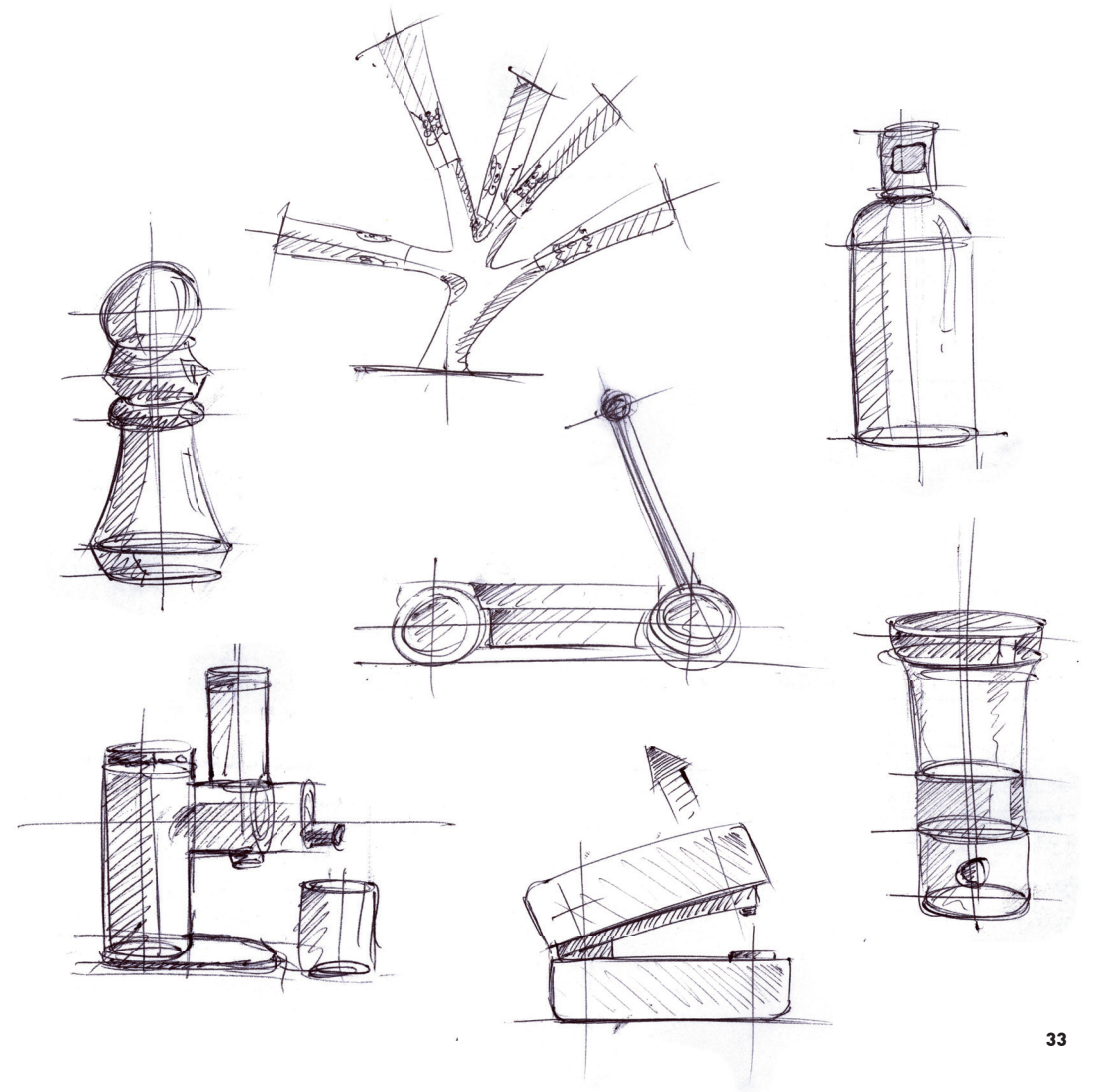
Shading exercises
Step by step guide.

When you finish sketching the lines of an object, it can be scary at first to start working with markers. I usually make some tiny illumination studies to find out which lighting concept works best. If you do so, you will know exactly what tone you need on each surface. The only thing you have to do is apply the best result on the original drawing. Do not forget that your goal is to create lighting contrasts between adjacent surfaces to highlight differences in form.

1) First layer
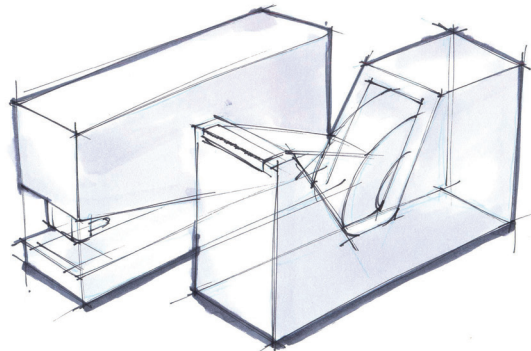
2) Second layer
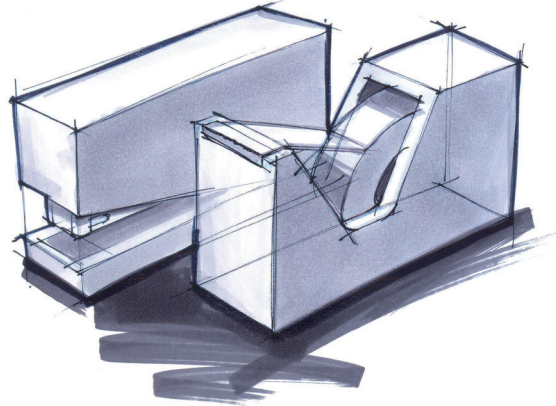
First, add a light grey tone to the shaded surfaces while keeping the lightest areas bright white. Second, apply a darker layer to the darker surfaces. Third, you can apply an even darker tone to the darkest areas. You can also use a dark-grey marker to create some abstract shadow effect.
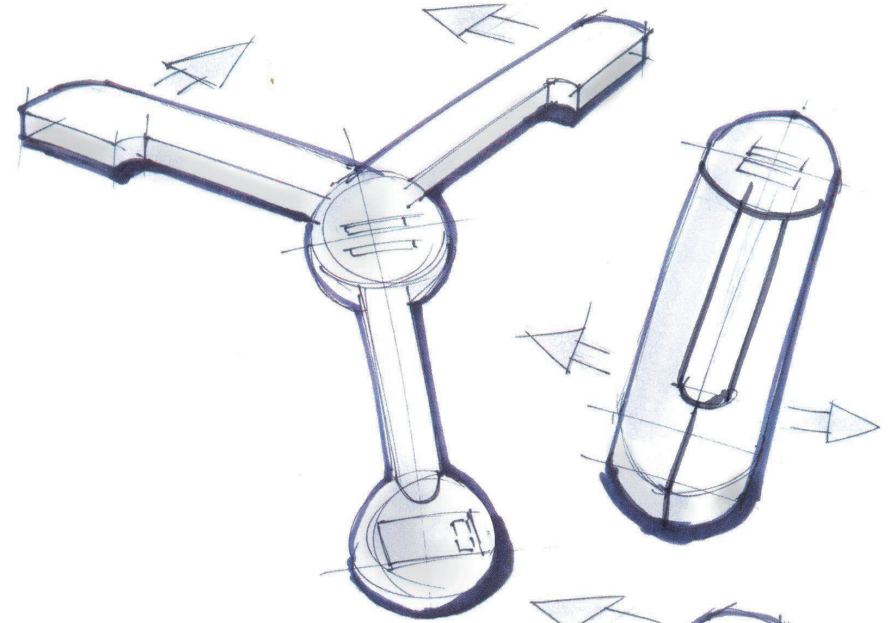
Shading exercises
Try to recreate the shading.

Practice first with tiny studies by copying the shading techniques shown in the following examples and then try to recreate the large versions. Use the paper in the back of the book to copy and exercise.
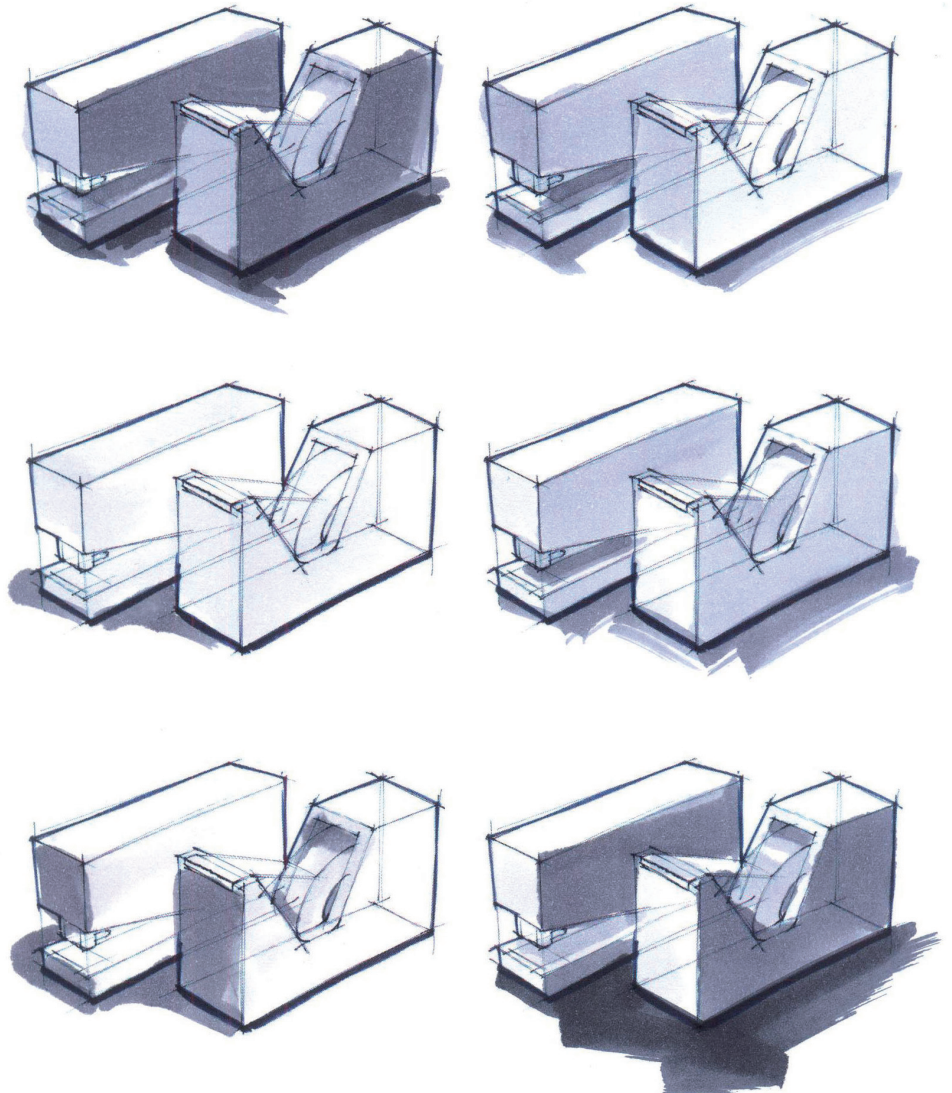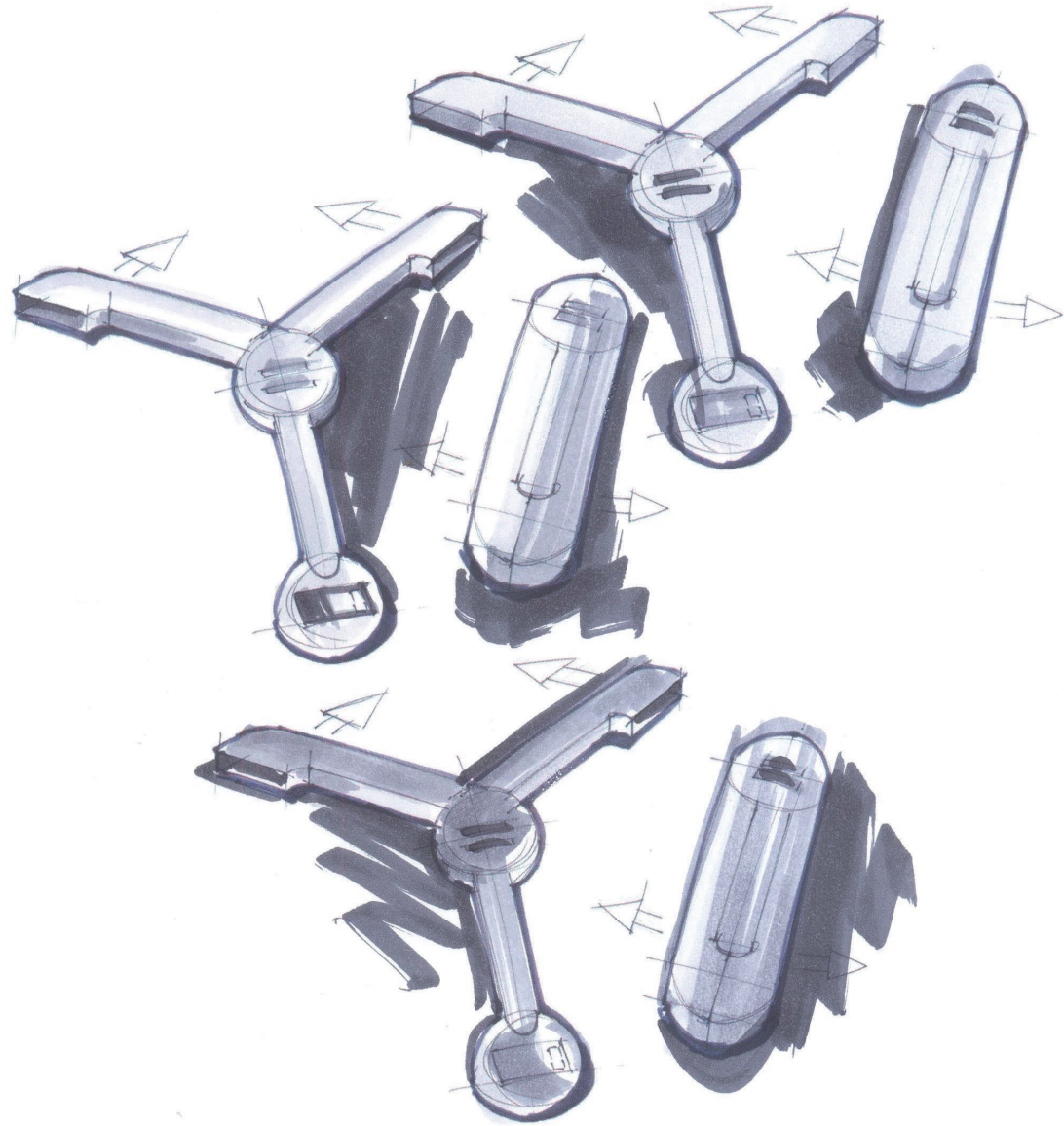
1) Primary soft grey layer

2) After addition of darker layers