Sighting

Drawing Essentials: A Guide to Drawing from Observation
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Second Edition
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Essential Drawing Principles in Relation to the Human Figure
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A basic understanding of the principles of sighting goes a long way in helping you to embrace and use the process to your advantage.

Some of you may be accomplished copying photographs or working from other two-dimensional sources. But you may be surprised and confused when you discover that drawing from observation of three-dimensional forms does not yield the same results, the same degree of accuracy to which you are accustomed. It is helpful to understand why this occurs.

Drawing or representing a three-dimensional form on a two-dimensional surface requires in essence a language translation. The language of two dimensions is different than a language of three dimensions in that three dimensions have depth, occupying space both up and down, side to side, and forward and backward. You must observe the three-dimensional form and translate it into language that will be effective on a two-dimensional surface, such as a piece of drawing paper.

When you draw from an existing two-dimensional source, such as a photograph, the translation from 3-D to 2-D is already made for you. But when you are referring to the actual form in space, you must make the translation yourself. The process of sighting provides a great method for making this translation easily and effectively.
A sighting stick is the basic tool for the process of sighting.

10 inch to 12 inch length of one eighth inch dowel stick

alternatives:
- slender knitting needle
- grilling skewer
- length of metal cut from a wire coat hanger

Sighting stick should be straight.

Some people like to add color to their sighting stick so that it is visually distinct from what they are observing.
Because the objective of sighting is to translate observed information into a two-dimensional language, all sighting observations will take place in an imaginary two-dimensional plane that is parallel to your face.

Imagine a pane of glass floating in front of your face at arms length. Looking straight ahead, the pane of glass is parallel to your face. Looking up, the pane of glass tilts along with your head and remains parallel to your face. Looking down, the pane of glass again tilts along with your head.

IT IS ALWAYS PARALLEL TO THE PLANE OF YOUR FACE.

This imaginary pane of glass represents your picture plane or your drawing surface, and all of your measurements and observations will take place in this two-dimensional plane.

Always keep your arm fully extended and your elbow locked when sighting. This establishes a constant scale, which is especially important when sighting for relative or comparative proportional relationships. You can rotate your sighting stick to the left or right, but you cannot tip your stick forward or backwards.

Close one eye when sighting to further reinforce the translation to a two-dimensional language by using monocular vision that flattens what you see rather than binocular vision with two eyes.
Sighting the Human Figure for Relative Proportions

Begin by establishing a **point of reference** or **unit of measure**.

The head is most frequently used as the point of reference assuming that the head is visible in its entirety for observable relationships – height and width.

Any part of the figure will suffice as a point of reference as long as there is a clear width and length that can be observed and measured. (A hand or foot may provide a workable point of reference.)

Whatever unit of measure is chosen as a point of reference should be established first in your drawing so that it may guide subsequent decisions regarding size and placement of the parts of the body that form the whole.
The head is most frequently used as the point of reference.

Student work. Erik Carlson. The length of the head from crown to chin is pulled down through the figure, revealing that the seated figure measures nearly 6 head lengths from uppermost to lowest point. Note that the second head length brings you to the line of the nipples, and the third head length
marks on the body.
Figure 2.1. Proportions of the human body

The human body is usually measured in units of heads. Most adults are around seven and a half heads high, but for practical and aesthetic reasons most diagrams show eight heads. It's not a big deal, just remember the head can be slightly larger in real life.

Unless you are drawing an adult that is standing up straight, you can't use this diagram directly. Instead, you'll have to use this as a guideline to determine how large something will end up after foreshortening, or in proportion to other parts of the body. Here are a few examples of such guidelines:

- Arms are 3½ heads long.
- When the arms are hanging down, the elbows line up with the bottom of the ribcage, and the fingertips reach halfway the upper leg.
- The navel is positioned roughly halfway between the nipples and the crotch, and halfway between the bottom of the ribcage and the top of the pelvis. A common mistake is to place it too low.

There are also several proportion guidelines that are not obvious from this diagram:
- The distance between the fingertips of the sideways outstretched arms is equal to the length of the body.
- The forearm is 1.7 times the length of the hand.
- The hand can cover the face (from hairline to chin).
Body and Face Proportions

**BODY:**
- Adult body height: 7 heads high
- Width from shoulder to shoulder: 3 head widths
- Distance from the hip to toes: 4 heads
- Distance from top of head to the bottom of chest: 2 heads
- Distance from wrist to end of outstretched fingers: 1 head
- Pelvic height: 1 head
- Distance from elbow to end of outstretched fingers: 2 heads

**FACE:**
- Eyes are halfway between top of the head and chin
- Upper lip is halfway between eyes and chin
- Corners of mouth line up with centers of eyes
- Top of ears line up above the eyes, on eyebrows
- Bottom of ears line up with bottom of nose
Body Proportions

At the right is a photograph with some of these common proportions shown. We should emphasize that these are averages, and will not necessarily hold true for every adult. In fact, what makes humans unique is that they come in a variety of shapes and sizes! However, if you want your sketches and drawings to look natural, using these ratios will help.

The head width is used as a guide to shoulder width, which should be about three head widths.

All of the other measurements are based on head height:

- The average adult is seven heads tall.
- The top of the hips are four heads high.
- The pelvic region is about one head high.
- Elbow to fingertip is about two head lengths.
- Wrist to fingertip is one head length.

Leonardo da Vinci also used these ideal measurements when he was sketching the human figure. The drawing by da Vinci entitled 'Vitruvian Man' is based on a model of ideal proportions established by the ancient Roman Vitruvius.

Facial Proportions

Here is a list of standard facial proportions that can give you a good idea of what is 'average'.

- The eyes are halfway between the top of the head and the chin.
- The upper lip top is halfway between the eyes and the chin.
- The corners of the mouth line up with the centers of the eyes.
- The top of the ears line up on the eyebrows.
- The bottom of the ears line up with the bottom of the nose.

Remember, these are average values. Very few faces will follow every one of these ratios exactly, but if you make your sketches agree with them, you will get pleasing results.
Sighting the Human Figure for Vertical and Horizontal Alignments Between Two or More Landmarks or Reference Points

The human form is rich in visual landmarks. Many are readily apparent – the tip of the nose, the back of the heel, the tip of the elbow, the right nipple, the wrist bone, the navel, etc.

Additional landmarks can be defined by a significant change in a contour, by a point of overlap or intersection, or by the outermost or innermost point of a curve.

Other landmarks to consider could include the point at which the contour of the neck intersects the contour of the shoulder; the contour where the upper leg meets the lower torso; the point at which the contour of the upper, inner arm disappears into the shoulder area; the outermost part of the curve of the calf muscle; and others.
Student work. Phil Scally. A variety of landmarks are identified in this drawing by the placement of gray dots. While they lack a specific name, they are places on the figure that can be easily returned to. Most of them involve two edges that meet, overlap, or intersect; a significant directional change in a contour; or the outermost or fullest point of a curve.
Student work. Glenda Oosterink. Vertical sight lines are extended through the figure at various points using a sighting stick. Vertical relationships between identifiable points or landmarks are sought, with the intention of maintaining these observed relationships in the drawing.
Student work. Jody Williams. Vertical sight lines can help identify when two or more points do not precisely align, with one point falling to the left or right of another point. In this example, note that the figure's right heel is positioned between a vertical extension from the front of the chest and a vertical extension from the back of the neck. Although this may seem obvious in looking at the drawing, it is much less apparent when scanning an actual three-dimensional figure without the aid of a sighting stick.
Figure 1–13. Student work. Jacquelin Dyer DeNio. Vertical sight lines pulled through a seated figure show a number of vertical alignments—front of right knee and back of left knee, right wrist and right heel, front of neck and back of left elbow, etc.

Figure 1–14. Student work. Joshua Ball. Horizontal sight lines pulled through a reclining figure show a number of horizontal alignments—inside edge of left upper arm and upper edge of right foot, upper edge of jawline and upper edge of left lower leg, ponytail and bridge of nose and left wrist, etc.
Sighting for Angles and Axis Lines in Relation to Verticals and Horizontals for in Relation to the Face of a Clock

An axis line is an imaginary line that runs through the core or the center of a form. A major axis line indicates the longest or most dominant directional thrust of that form. A minor axis line typically is at a right angle to a major axis line. More complex objects can have more that one axis line, as there may be thrusts in a number of directions. By determining the correct angle of the axis line, one can then begin to draw the edges and contours of a form around the axis line to determine the correct directional thrust.
Align your sighting stick visually along the observed edge or axis (without tipping your stick forward or backward!) and observe the relationship between the angle (indicated by the position of your sighting stick) and a true vertical or horizontal, whichever it relates to more closely.
After you have aligned your sighting stick along the edge/angle that you are observing, imagine that your sighting stick is running through the face of a clock and relate it to a specific time of day.

Imaginary clock face for sighting angles. Angle A is at 5:30 or 11:30, angle B is at 1:00 or 7:00, and angle C is at 2:30 or 8:30.

Student work. Matt Maxwell. Observed angles and axis lines in the figure can be determined using either of two methods—comparison to a vertical or horizontal or use of an imaginary clock face, as shown here.