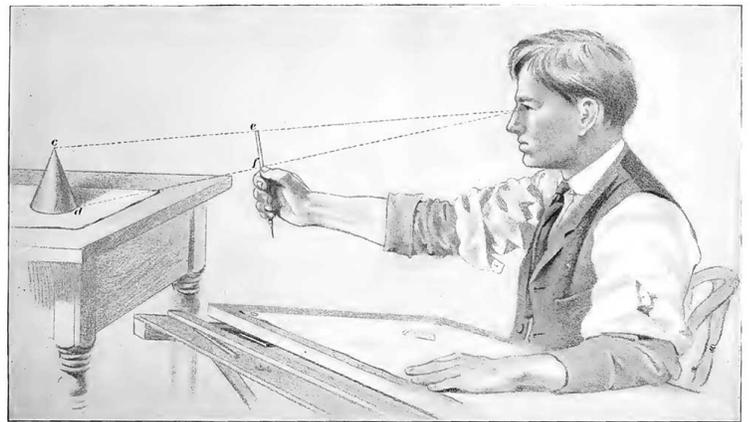
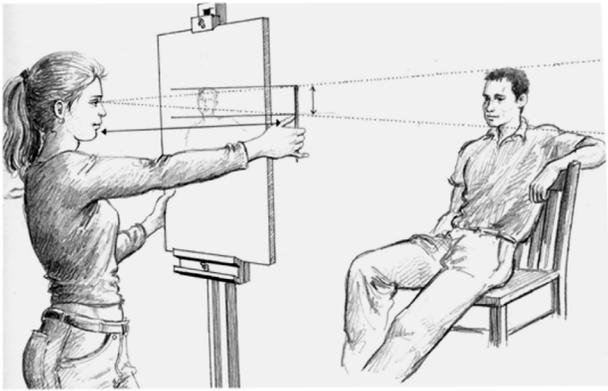


Sighting & Measuring

Sighting is a technique of discovering sizes, placements, angles and proportions in an observed three dimensional object or scene, and using this information to translate the actual observation into a convincing two dimensional representation in drawing or painting.

The primary tool used in sighting is a simple stick called a sighting stick, thin and preferably 10-12" long. A bamboo skewer works well for this. You can purchase a pack of 100 bamboo skewers for a couple of dollars from any grocery store. The stick is used to measure the apparent relative size and angle of the observed scene. In order to get useful results, the stick must be held always at the same distance from the eye, so it is **always held at arms length**, with the shoulders perpendicular to scene and the head pointed directly toward it. The head must likewise be level to the floor to accurately see horizontals and verticals, never tilted sideways.



In sighting we imagine that a transparent plane exists between our eye and the scene we are observing, an arms length away. The sighting stick is always parallel to that plane, never tilting forward or backwards. It is free to move vertically or horizontally, and free to rotate within the plane to measure angles.

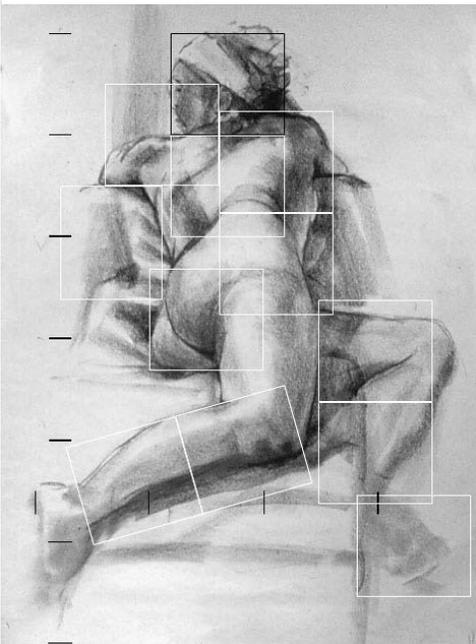
We measure for **relative** proportions by aligning the stick to a form and marking the length of that form, normally with a thumb. It is best to choose a readily apparent and relatively small object or space that can be easily re-measured as this "reference object". We then can measure using the marked amount and estimate the number of these reference lengths for the entire assembled scene or any parts thereof. The stick with its measure can also be turned at any angle within the drawing plane and used to measure elements that exist at that angle.

The sighting stick is also used to check for vertical and horizontal alignments of forms or significant portions of forms or landmarks. These alignments make it possible to accurately place various elements of the drawing in their correct relationships to the other forms and spaces and to the edges or the drawing itself. They are also a wonderful way of determining and fixing errors before too much time and effort has been wasted.

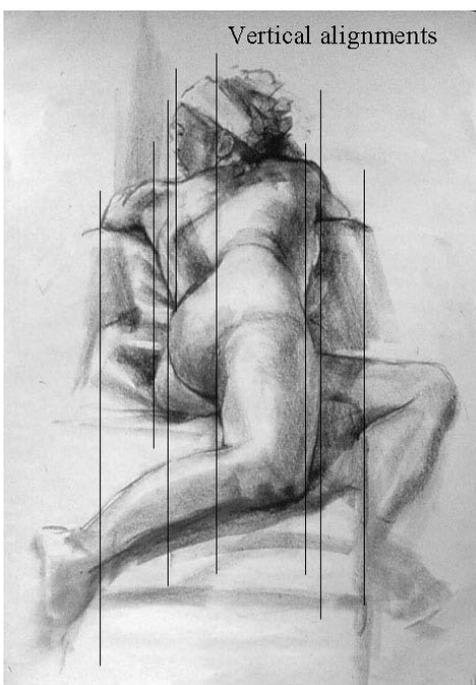


Finally, the stick can be used to check the relative angles of elements by comparing the angle of the subject matter with the vertical or the horizontal (representing the edges of the drawing paper); whichever is closest to the angle in question. Hold your stick at the angle, see the appropriate horizontal or vertical in your minds eye, compare the two and translate that angle to your drawing. Alignments of elements and landmarks occur at these angles as they do with horizontals and verticals, so look for them!

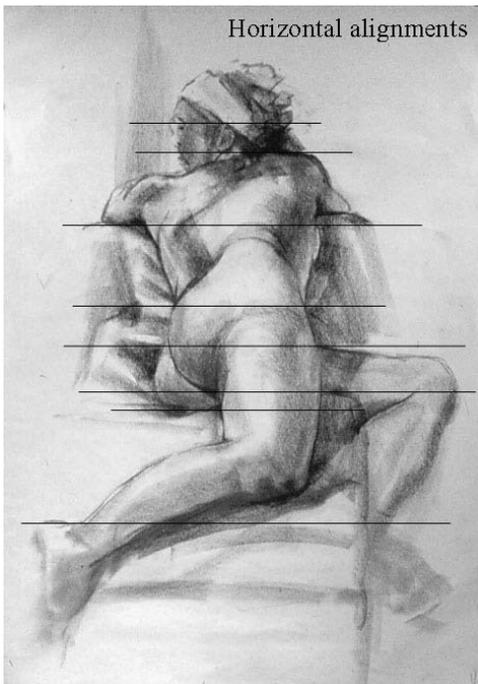
In general, it is best to do a rough, light impression or gesture of your subject on the paper, perhaps after using a viewfinder to decide on your composition. Then decide on a reference object, and begin checking the sizes and relative proportions of the whole composition, starting with the largest, most general forms, shapes and angles and refining and subdividing these forms as you go along. Work back and forth between all the uses of the sighting stick. It takes some time to learn to see alignments, and use the sighting stick to measure and estimate angles takes practice, but it is a skill well worth learning.



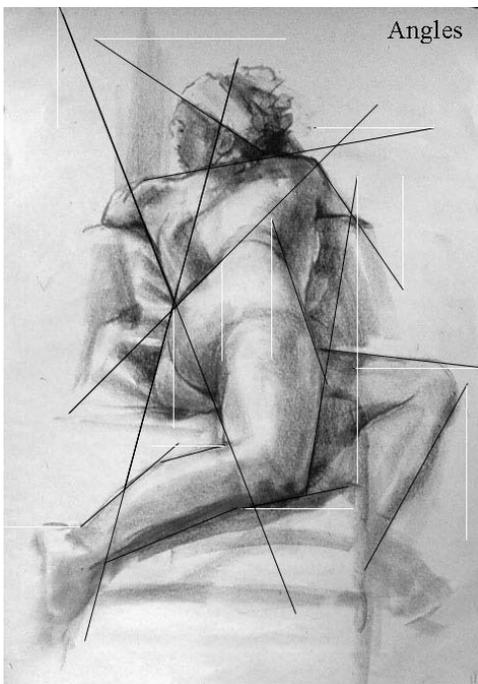
Any clearly defined object or area with height and width can function as a **reference object**. It should be something no larger than a third of the drawing dimensions, though. Use it to determine the overall height and width of the drawing, marking off the measure on your sighting stick with your thumb and then comparing it to what you wish to measure. The reference object can be at an angle, as long as you can repeatedly sight that length and that angle with your sighting stick. You can rotate the sighting stick in the picture plane to measure elements at an angle. It may be easiest to use the vertical height of your reference object for vertical measurements and the width for horizontal ones.



Search for **vertical alignments** to help you place elements of the drawing. Remember to keep your head vertical, and that a vertical represents the side of your paper when noting such alignments on your drawing. The vertical is the easiest alignment to see, and doesn't change as you look to low and high areas of a large object. Note where exterior edges align with interior ones. You can also use vertical alignments to estimate lengths rapidly before doing more precise measurements using the reference object. Lightly drawn guidelines can be a big help, just make sure they are parallel to the sides of your paper.



Search for **horizontal alignments** to help you place elements and negative spaces of the drawing. Remember to keep your head vertical, and that a horizontal represents the top and bottom of your paper when noting such alignments on your drawing. The horizontal is a bit harder to see, with precision than the vertical, it may be helpful to think of it as a right angle to the vertical. Tilting your head will throw this off; your two eyes need to be aligned horizontal to the floor for you to see it well. Otherwise, horizontal alignments are seen and used just like vertical ones. If you are using a viewfinder, its sides and top/bottom correspond to both the theoretical axes of your sighting stick and the edges of your paper.



You can compare **angles** that you see in your subject to the verticals and horizontals you have been viewing. Rotate your sighting stick to the appropriate angle to match a dominant angle in the subject, compare it to either a horizontal or vertical (whichever it is closest to, as small angles are more precise than larger ones) and translate the angle to your drawing. Remember to look at what else in your subject might align with that angle, such as the shoulder lining up with a continuation of the angle of the hip in the example to the left. What other alignments can you see? In the example, the black lines are the sighted angles, the white represent the horizontals and verticals they are compared to. As you sight angles, imagine the angle is an hour hand on an analog clock, and name it. For instance: the major angle running along the model's back as shown in the illustration to the left would be about 11 o'clock.