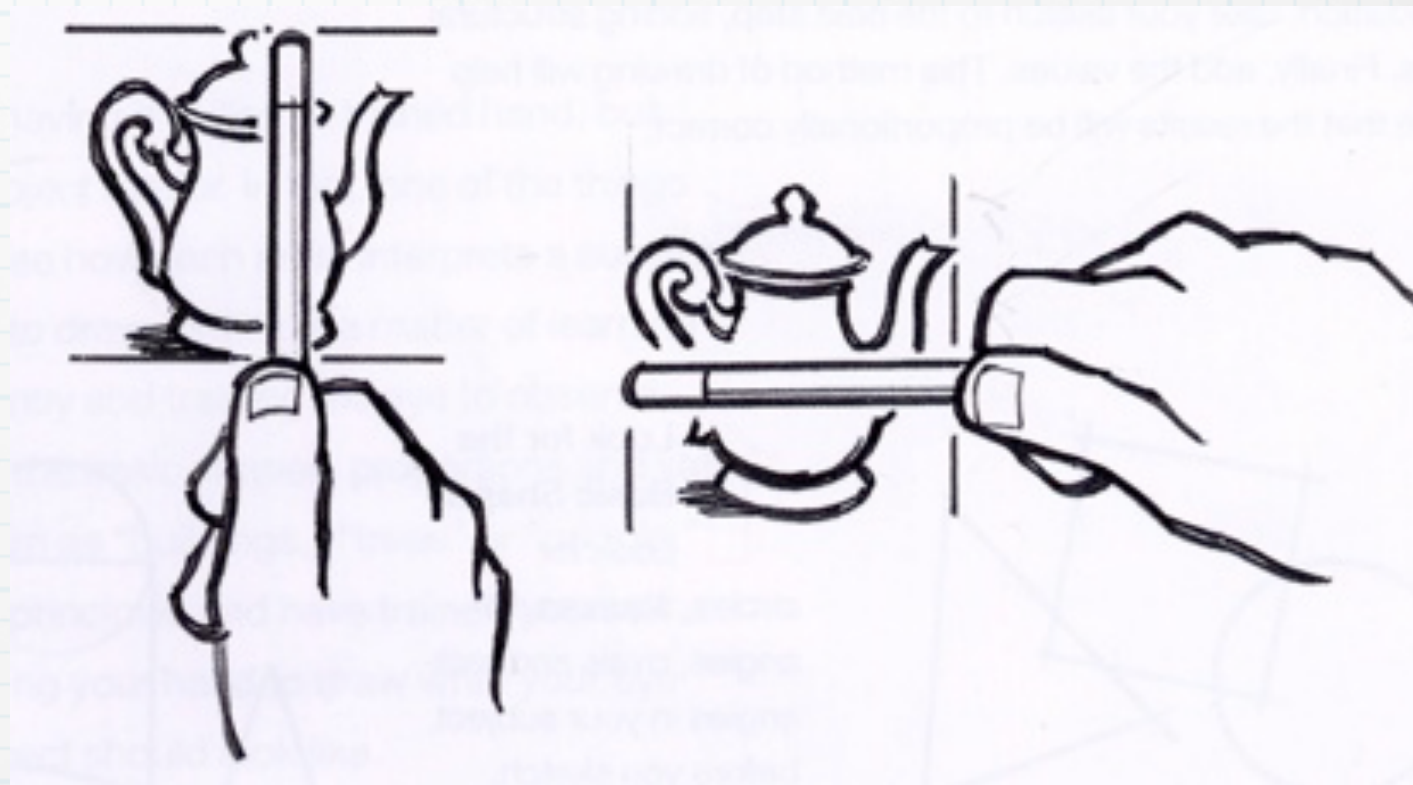


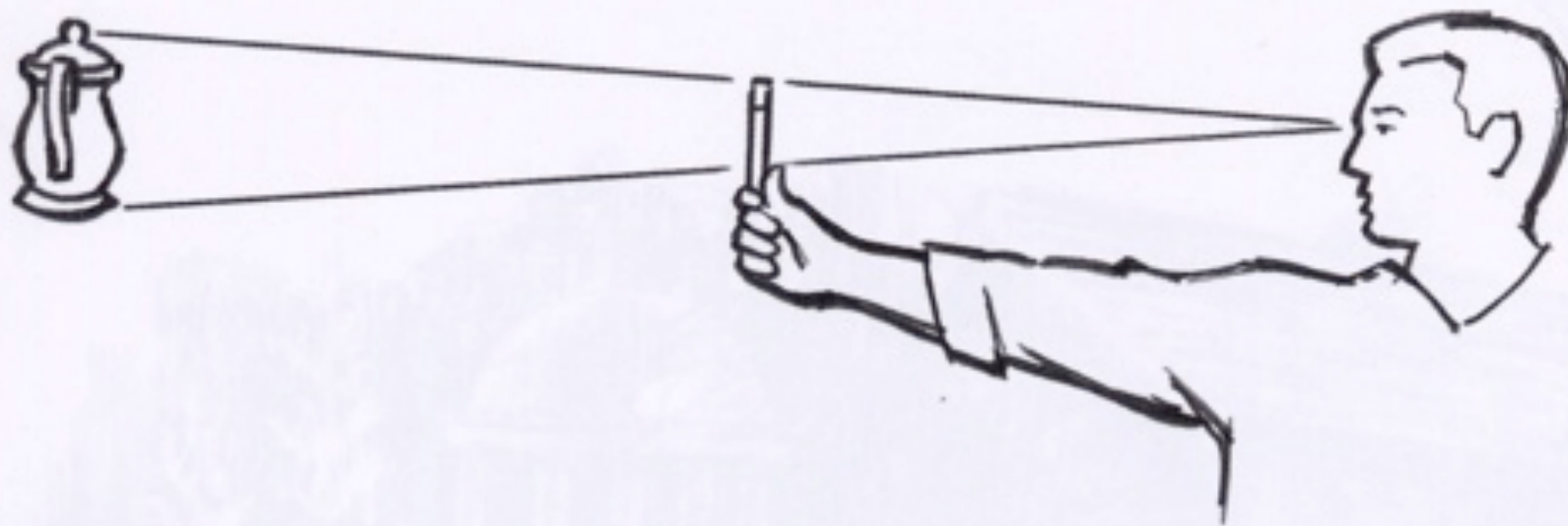
Tools: Gauging Proportions with a Pencil

- ▶ Gauging proportions can be done by “measuring” each part of the subject with a pencil.
- ▶ Use the top of your thumb to make the distance from the end of your pencil.
- ▶ Now compare this measurement with those of other parts of the image.
- ▶ In this example, the teapot's height is equal to its width. (*Willenbrink, Drawing for the Absolute Beginner*)



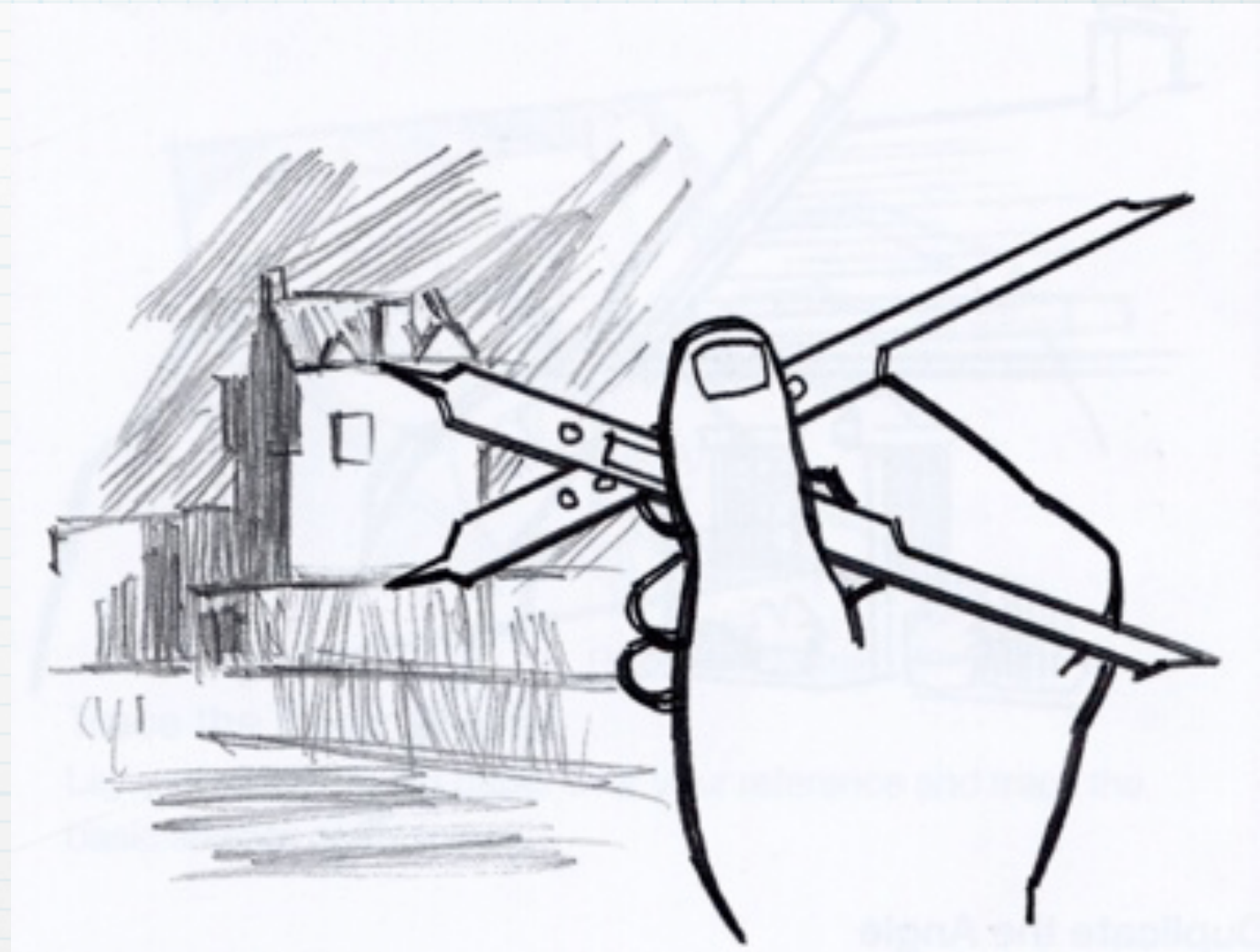
Measuring Proportion: Doing it Right

- ▶ **Looking in Accurate Proportions:** To correctly gauge proportions in this manner, lock your arm straight in front of you, holding the pencil straight up.
- ▶ A bent arm is not as accurate because you may hold it at different distances and different angles each time you measure. (*Willenbrink, Drawing for the Absolute Beginner*)



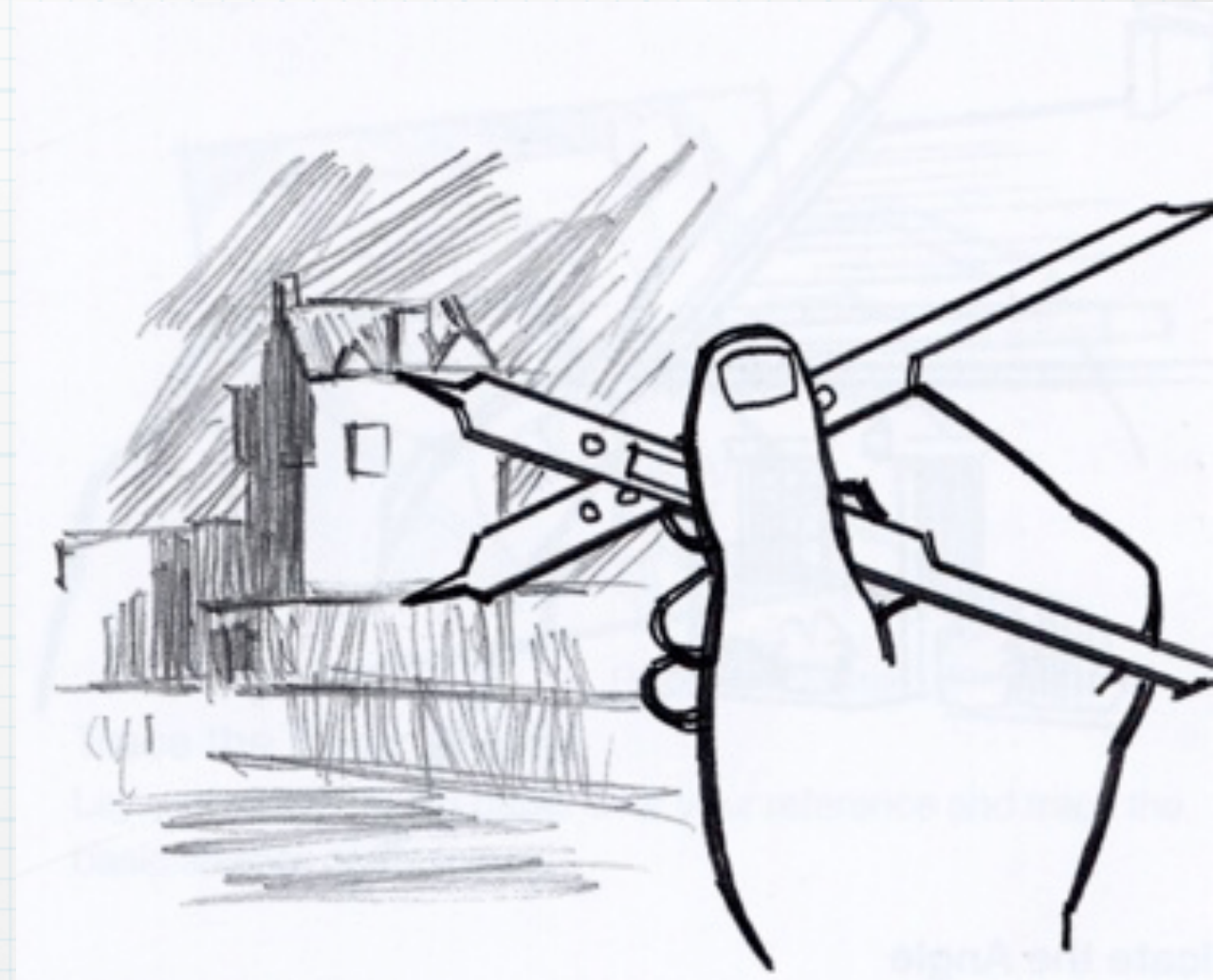
Tools to Measure Proportion

- ▶ There are many tools available for gauging proportions, from a simple pencil to tools made specifically for measuring. These include sewing gauges or dividers.
- ▶ Dividers are used primarily to gauge proportions of two-dimensional reference materials including photographs, illustrations etc. (Willenbrink, *Drawing for the Absolute Beginner*)



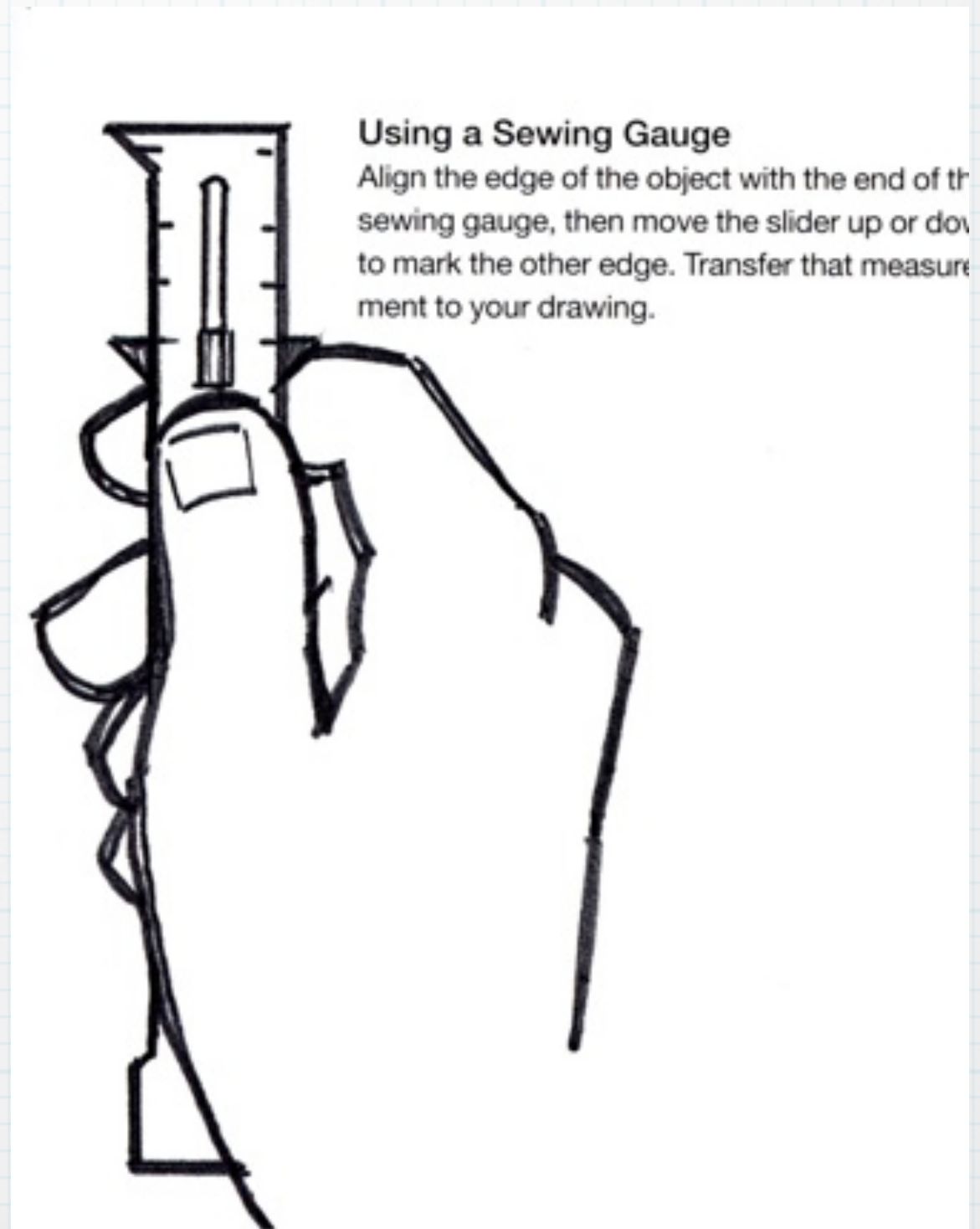
Tools: Proportional Dividers

- ▶ Proportional dividers allow you to measure with one end of the tool and use the other end to determine the size of the image in your drawings.
- ▶ Proportional dividers are used not only to compare proportions but to reduce or enlarge.
- ▶ One simply measures the object with one end of the dividers, then use the other end to mark the measurement for your drawing.
(*Little, Draw Now*)



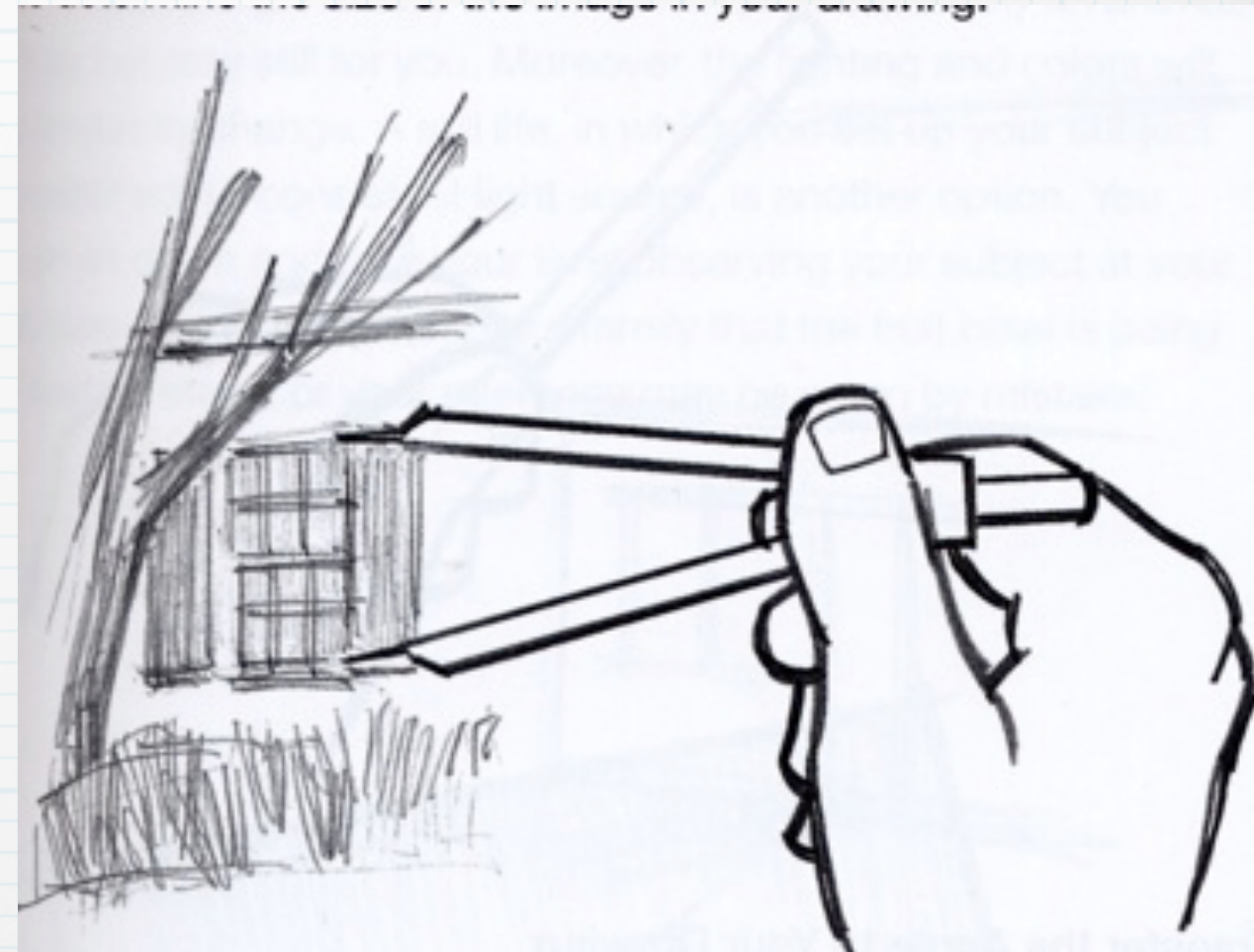
Tools: The Sewing Gauge

- ▶ Align the edge of the object with the end of the sewing gauge, then move the slider up or down to mark the other edge.
- ▶ Transfer that measurement to your drawing. (*Willenbrink, Drawing for the Absolute Beginner*)



Tools: Standard Dividers

- ▶ Measure the subject in your reference with the dividers and transfer the length.
- ▶ You can only measure in a one-to-one ration with standard dividers.
- ▶ If you wanted to reduce the window in this illustration to half its size, you would have to halve the divider's measurement. (*Little, Draw Now*)



Steps: Measuring Angles

- ▶ **1. Duplicate the Angle:** First, duplicate the angle of the subject by aligning a pencil with it.
- ▶ **2. Transfer the Angle to Your Drawing:** Keeping the pencil at the same angle, hold it over the drawing and adjust the sketch as needed.
- ▶ **3. Using an Angle Ruler:** An angle ruler also can be used for duplicating angles. Simply line up the angle ruler with the subject and transfer it to your paper. (*Willenbrink, Drawing for the Absolute Beginner*)

