

Foundational Principle #7: Proportions & Grids

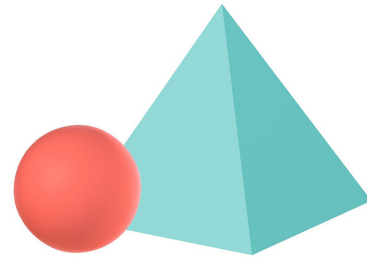
The Importance of Proportions

When drawing or painting, developing proper proportions is imperative. If a subject does not have proper proportions, whether an element is too long, too short, too big or too small, the image will feel “off,” even if the observer (or artist!) does not know exactly why. Drawing something perfectly proportionate can bring your piece to life. Learning to draw from a reference photo or from life can be challenging; nevertheless, there are some simple tricks you can use to simplify the process.

Drawing from Two-Dimensional Images

When drawing from a reference photo, use the edges of the reference to help determine placement. For example, you can visually estimate whether a particular element should be placed in the image’s upper or lower half, third or quarter. You can even draw some thin guidelines across the reference to divide it into halves, thirds, quarters or any other fraction that will help simplify the process.

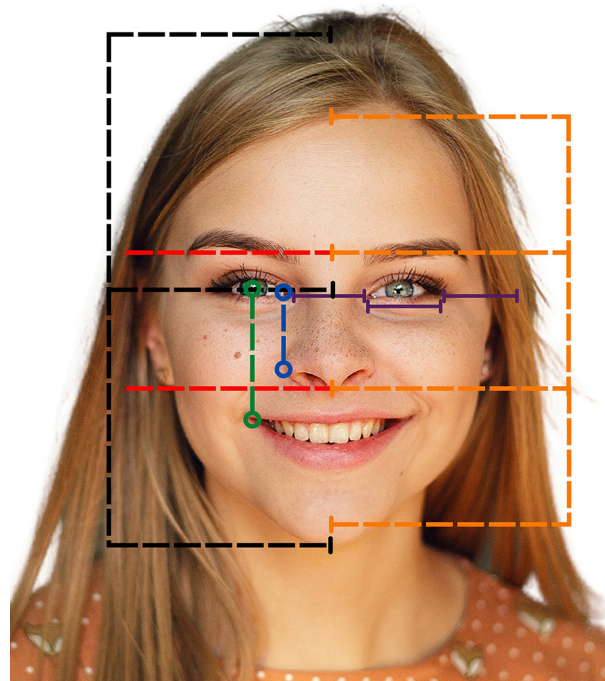
Likewise, you can make comparisons between lines or shapes within the image itself. For instance, if you were drawing the two shapes on the right, observing that the sphere is approximately half the height of the pyramid would keep you from drawing one too small or too big in relation to the other.



Using Proportions for Portraiture

For portraiture, you can apply the following proportions or ratios to place each element approximately where it should be in relation to the others (as the image below demonstrates). While each person is uniquely designed, and these “rules” are generally accurate, you will find exceptions. This is one of the things that makes portraiture so much fun as you work to identify and highlight your subject’s distinguishing characteristics. For example, the following “rules” are generally true when viewing an adult face straight on (twisted poses will alter the rules, and children, especially babies, have different proportions):

- From the bottom of the chin to the very top of the head, the face can be divided in half and the eyes placed in the middle (shown in black). The top line should be based on the skull itself, not the hair. Also, keep in mind that whether the mouth is closed or open may raise or lower the bottom line slightly.
- From the bottom of the chin to the hairline, the face can be divided into thirds (shown in orange). The bottom of the chin to the bottom of the nose creates the first third, the bottom of the nose to the underside of the eyebrows is the second third and the underside of the eyebrows to the hairline is the final third. The orange lines at right show equal measurements, but as you can see, these are not perfectly aligned on the model as hairlines can vary, eyebrows can be different shapes (even on the same person) and an

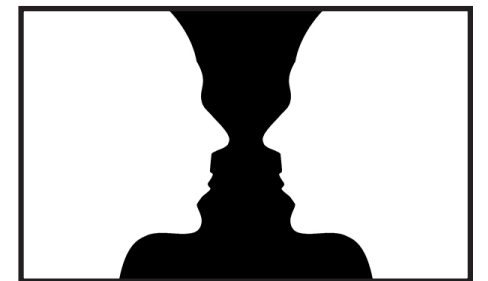


open mouth can drop the jawline.

- The width of the head from the top outside of one ear to the top outside of the other ear is the width of approximately 5 eyes (shown in purple). One eye-width space is located between the two (actual) eyes, and then another eye-width space can be placed outside of each of the eyes, extending out to the ears.
- The width of the bottom of the nose is also equal to the width of an eye and can be placed by drawing a line straight down from the inside of each of the actual eyes (shown in blue). Please note that a smile may slightly impact the nose’s width for many people as the nostrils widen.
- The mouth (specifically the line where the lips meet) is located approximately one-third to halfway between the bottom of the nose and the bottom of the chin, measured down from the nose. However, this is the proportion “rule” with the greatest differentiation and is not shown on the image.
- The width of the mouth can be determined by drawing a straight line down from the inside edge of each pupil for a relaxed pose or straight down from the center of the pupil for a wide smile when a model is looking straight ahead (shown in green).
- The height of the ears can generally be found by drawing a line outwards from the bottom of the nose and the underside of the eyebrows (shown in red).
- The width of the top of the ear is once again determined by an additional eye-width space extending outwards from an actual eye (shown in purple). The ear will then angle inwards as it extends down the face meaning the top of the ear is its widest point.
- The neckline extends down from the bottom of the ears, generally curving in slightly around the jawline. In reality, even slender feminine necks are typically not narrower than the space created between the outside edge of the two eyes. Nevertheless, depending on perspective or a model’s pose, this can vary visually, as you can see in the image on the previous page as the woman’s neck is well past the outside edge of the left eye but inside the outer edge of the right eye.
- The head’s overall shape, especially regarding the jawline, can vary greatly, but it should be noted that this is generally more oval than circular, sometimes even egg-shaped.
- Last but not least, the width of the shoulders is about the same distance as the width of two heads.

Positive and Negative Space

In addition to comparing elements within your image, you can also use positive and negative space to your advantage. Positive space is the shape, element or subject itself. Negative space is the area around it. Sometimes, focusing on the positive space is easier, while other times, using the negative space to determine proportions or the placement of lines is more straightforward. Always go with what is easiest! In fact, sometimes the positive and negative space can be subjective, as the image at right shows. If you were to draw the image, what would you be drawing – a candle stick, silhouettes or both?



The Grid Approach

You can use a grid (similar to the exercise from “Foundational Principle #1: Learning to See”) to drastically reduce the number of details that your brain must focus on at any given time. Gridlines also increase the number of comparisons you can make within and between the lines for the element(s) you are drawing, likely increasing your overall accuracy.

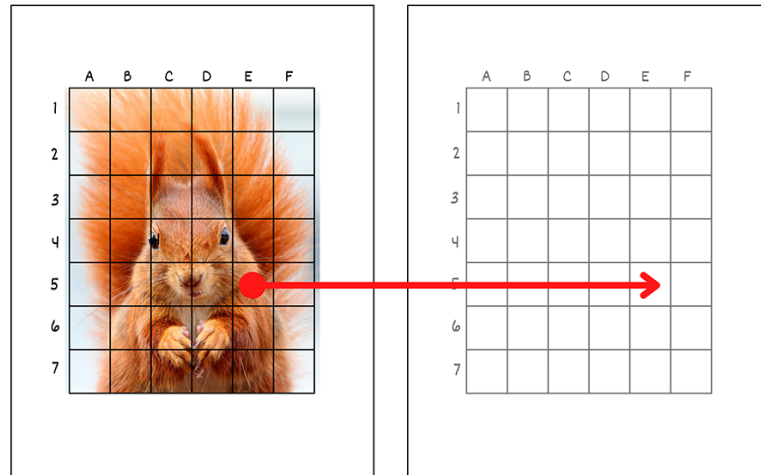
Using a grid is nothing new, as master artists have used this approach for hundreds of years (see the drapery studies on pages 74-75 which show a grid in use from the 1400s and two from the 1800s.) Today, we can create

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grids by hand as the old masters did, or we can use a digital grid-making app to add one to our reference photo (found in several popular digital art programs and app stores).

To create a grid by hand, draw evenly spaced horizontal and vertical lines with a pen or pencil and a ruler on your reference photo. Create any size square you like, although 1" is standard for small images. Next, lightly draw the exact lines on your paper or canvas with a sharp pencil. Optional numbers and/or letters can be placed around the perimeter to help you quickly find and compare squares within the grid.

Then, simply draw exactly what you see in each square of the reference photo in the corresponding square on your drawing paper. Continue to look back and forth between the grids as much as needed to ensure that the squares match as closely as possible. When you are done drawing the outline and any important interior details, simply erase the grid lines or transfer the image to a new worksurface (see "Foundational Principle #8: Transferring") before adding more detail, value or color.

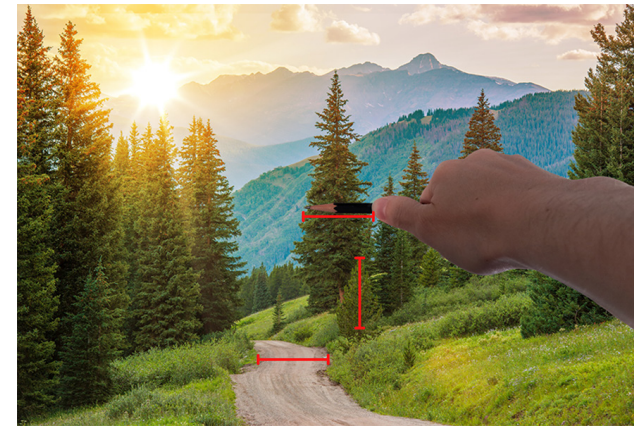


Grid lines can also be used to increase or decrease the size of an image proportionately. For instance, if you want to draw something larger than what is shown in your reference photo, simply create the same number of squares on your reference and drawing paper but of different sizes. Creating 1" squares on the reference and 2" on the drawing paper, for instance, would double the size of your drawing, while taking the opposite approach would proportionately reduce the size of your picture.

Drawing from Three-Dimensional Objects (Life)

You can continue to make comparisons when drawing from life, albeit in a slightly different form. While you cannot draw grid lines in space to help simplify an image, you can use a "tool" to compare the length of an element with others in the picture. To do this, artists will hold an object, like a pencil, out in front of them (at arm's length) to "measure" the size of one element and then compare this size with a second element to see if they are the same length or if one is shorter or longer, and, if so, by approximately how much.

As you can see in the image on the next page, the artist slid her thumb down the pencil to measure the width of one of the trees. She can then move her arm (at the shoulder) or rotate her wrist to compare this measurement with others, like the width of the road or the height of another tree. However, please keep in mind that this technique only works if you stay sitting or standing in the exact same position AND your elbow is locked straight; otherwise, your perspective will change and the proportion comparison will not be accurate.



Problem Solving

Sometimes, even when you have done your best to keep the proportions as accurate as possible, something still feels off and you cannot identify what it is. If it is a piece you have been working on for a long time, then it may be challenging to figure out on your own because your brain has become so accustomed to seeing the image the way it is that the incorrect area(s) no longer stand out. There are, however, several approaches you can take to help solve this problem:

- First, you can ask someone else who has not seen your work to provide feedback. Even if they know nothing about art, the problem area might jump out at them because they are seeing the piece for the first time, and they can direct you to the problem.
- Second, you can set your piece aside for a while, sometimes days or weeks, and then come back and look at it again and it will likely be as if your brain is seeing it for the first time, and you will notice the issue yourself.
- Third, you can hold your artwork up to a mirror and look at it in reverse. This tricks the brain into thinking you are seeing something new, and the problem area may become immediately evident.

Additional Tips and Tricks

Looking to simplify things further? As discussed above, break your work down further. Subdivide a grid square into halves or quarters in your mind. This helps to better determine where your line should be placed within the square. Erasing too much? Use dots. Instead of drawing an entire line and then having to erase the whole thing, simply place a few dots to show where you think the line should be. Then, when you have got it right, connect the dots. As always, the right practice makes perfect, so keep drawing, and you will become faster and more accurate.



See how the word "ART" is reversed in the mirror?

Exercises

For experience, create two new drawings. First, choose a simple 2D image of your choice and then draw it on a sheet of drawing paper using at least three of the principles detailed above. Second, choose 1-3 simple 3D objects that you can draw from life using the principles listed above for life drawing, being sure to make comparisons between them.

The more you practice, the faster and easier it will be to draw from both reference photos and life. In fact, for my first drawing class in college, we did nothing but sketch simple 3D models over and over and over again for an entire semester. Initially, it took most of a class period to create a single arrangement that looked halfway decent, but by the end of the course, we could complete several drawings within a class period, and they looked far more accomplished. All to say, good practice really does make a difference!