LESSON 8 - BODY PROPORTIONS

Basic Guidelines

Most people are seven to seven-and-a-half heads high, but there seems to be a general consensus of opinion that drawing a figure with those proportions often looks squat. So the classic division of the body is usually done in eight equal segments:

- The height of the head is the first division.
- The second division is at the breastbone.
- The third is at the naval (which is even with the elbow).
- The fourth is at the groin (which aligns with the wrist).
- The fingertips is at the fifth segment.
- The knee is positioned in the sixth division.
- Just below the calves is the seventh line.
- The bottom of the feet is the eighth. These proportions can be tweaked as needed.

[Diagram of body proportions]
Practicing drawing the standing position will give you a feel for the human body proportions. Since the body is a collection of basic shapes, when you are drawing figures, you can start a block-in with ovals for the arms, legs, neck, and head, circles for all the joints (the knees, ankles, and wrists), and triangles for the feet, hands, and trunk. See Fig. 8-2a.

Compare the proportions for a male figure and a female figure. The waist is lower on a man, and also the hips are narrower and the shoulders wider.

Fig. 8 - 2a
To measure the relative size of a person (or to estimate how many heads tall your model is), we'll use the standing figure in Fig. 8-3 as an example to apply the process you learned in Lesson 6, Relative Proportions.

To recap from Lesson 6, when measuring relative proportions, hold the bottom of your pencil or sewing gauge in your fist with the thumb pointing straight up, extending and locking your arm in front of you (Fig. 8-4). Remember, the trick to this is to stay in exactly the same place each time you take a measurement with arm locked to assure the correct scale and ratio.

Close one eye and align the top of your pencil with the top of the model's head and slide your thumb down the pencil until it aligns with the model's chin. This will give you your basic unit of measurement on the pencil. Repeat this step as you go down the body. The second measurement is usually across the
Lesson Summary

breast so this will be the second head measurement. Continue dropping the top of the pencil to the next point until you get to the feet. A tall person may be eight heads high. If the subject is short, it may only be seven or seven and a half heads high. The model in Fig. 8-3 is eight heads tall.

To place these measurements on the paper simply make eight or nine equally spaced horizontal lines down the paper. The actual distance doesn't matter, so long as they are even with each other. You are scaling the observed information to fit the page, so you can easily draw the figure larger or smaller than the photograph. Your top division will be the head, the bottom the feet. Once you have the horizontal lines evenly spaced, then draw in your vertical axis line.

Contrapposto: An Essential Figure-Drawing Concept

Take special note of the *contrapposto* position of the figure: the shoulders and hips are at opposing angles rather than straight across because the model is in the middle of a step and her body is curving (see Fig. 8-5). This will affect how the entire body will be drawn.

*Contrapposto* was coined by the Old Masters to describe the opposing action in the chest and pelvic areas to maintain the body’s core of balance. If you are standing with most of your weight on your right foot, your **LEFT hip** will naturally drop, and your torso will compensate for that shift in balance by dropping your **RIGHT shoulder**. Your shoulders and pelvis will be at opposing angles. An exception to this rule would be if you raise an arm or put your hand on your hip.

As you begin to draw the rest of the figure, check the placement of key points against your head measurement. For example, the armpit begins just above the second head line, the hips at the third. Naturally this will vary depending on the body shape and pose of the model. The head unit can also be used to check the size and relative placement of other parts of the body, so use the scale you have established with the height to judge the correct distance on the paper.
Artist Mannequin: A Great Tool

A wooden artist mannequin (Fig. 8-6) purchased at any art store is very helpful to become more familiar with the body and how its segments move together. Move the mannequin's arms and legs to see how they bend. The joints indicate all the action and movement. Bring an arm toward you so you can study how to draw it in a foreshortened position. Foreshortening refers to the visual effect (or optical illusion) that makes an object appear shorter than it actually is because it is angled toward or away from the viewer (see the circles). Fill many pages of your drawing pad with sketches – it will help you enormously if you’d like to get into figure drawing.

When sketching artist mannequins or figures, either from a real one you’ve purchased or using the images in the “Mannequin Poses” document available below this lesson’s video (www.posemaniacs.com is also a great resource for poses), keep in mind the following:

• Realize that mannequins are often shorter, perhaps 6 – 7 heads, but we’re not focusing as much on the divisions of the body with mannequins as much as on the action of the figure and accurately rendering shapes and foreshortening.
• You are going for a block-in. Of course you may choose to develop detail in your sketch, but for the purposes of this lesson, you are building on what you learned in the Action Drawing lesson to capture realistic movement and what you are learning in this lesson to gauge appropriate body proportions. Focus on the basic shapes when blocking in the human figure.
• As always start with the obvious angles you observe (the core line, the shoulder line, and the hip line). All the other lines and shapes will evolve from those.
• When sketching a foreshortened limb or torso (such as a bent-forward or bent-back figure), you must
draw what you SEE, not what you KNOW. The foreshortened limb looks so much shorter than you know it must be, and you’ll be tempted to draw it longer than it actually looks in the image to compensate. But when you finish, you will see the two arms or two legs look asymmetrical. So even if it feels strange, draw it as it is: using other markers (such as how the fingers end right at the groin in Fig. 8-7) to guide your eyes to see what is actually there as opposed to what you know to be true of the human body. Also with foreshortened limbs, you will have many curved lines as indicated in Fig. 8-8 to indicate the shape the limbs take when they’re seen from an angle.

Knowledge of the human skeleton and the muscle formation as muscles are laid over the bones is critical when drawing the figure, but that is for a course in figure drawing. For now, let’s just focus on the basic principles presented in this lesson. If you want to get more technical, here are a few additional facts on proportions, but the diagrams Fig. 8-1 and 8-2 are really all you need to get started.

- The chin to the shoulder line is about half of one head length (Fig. 8-9).
- The space between the nipples equals one head length (Fig. 8-10).
- The length of the hand is equal to the average face height (Fig. 8-11).
- The calf muscles are higher on the outside of each leg than on the inside (Fig. 8-12).
- From the center of the knee cap to the ground is two head-lengths (Fig. 8-13).
- The foot is one head-length long (Fig. 8-14).
- The ankle bones are higher on the inside (Fig. 8-15).
Variations on Body Proportions

Although the previous body proportions are estimated with a model standing, many times you will want to draw a figure in different positions (i.e. crouching, bending, sitting). Andrew Loomis provides a good chart on this. See Fig. 8-16.
Children’s Proportions

The younger the child, the larger the head will be in proportion to the rest of their body. In the diagram in Fig. 8-17, you will see that the eyebrows start halfway down from the top of the head, but the ears are just below that line. The eyes are large for the face and there is a bit more than the width of an eye between them. The bridge of the nose has a concave shape, usually significantly more so that an adult’s bridge, and the upper lip protrudes a bit beyond the lower lip.

When drawing a child, there are no set rules because children are all growing at different rates. But it’s helpful to know that a child’s head is larger in proportion to the body than in the case of adults. Fig. 8-18 is a sketch of a child’s figure, perhaps five or six years old. If you take her head height measurement, you will see she is about five heads tall.

Fig. 8-19 shows another chart that shows the ideal proportions as a child grows into adulthood.
As children grow, naturally their proportions change. This chart can help you gauge the changes as you draw people at different ages. Some interesting observations include:

- The halfway point of the body shifts from the navel of a baby to the groin of an adult.
- The head of a baby is one-fourth of the body, while the head of an adult is one-eighth.
- The legs grow nearly twice as fast as the torso.
Practice Before Next Lesson

- If you don't own an artist mannequin to practice drawing, then feel free to draw from the pictures in the document titled, “Mannequin Poses,” available below this lesson’s video. The mannequin is very similar in body structure and joint movement to humans, so it is good practice. Don't get bogged down in the details when you are drawing. Remember the lesson on gesture and sketch the line of the body first to get the movement. Then follow up with the block-in and work loosely to sketch ovals for the arms, legs, and head; triangles for the chest, hands, and feet; and circles for the joints (elbows, wrists, and knees). See Fig. 8-20.

- A great website for practicing figure drawings is www.posemaniacs.com. This site has a large variety of human figure poses to choose from such as Fig. 8-21.

- The images in Fig. 8-22 through 8-24 help the artist see how important the mannequin is in understanding movement and how the light falls on the planes of the body. If you are feeling ambitious, try tracing the mannequin and the finished figure. This will help you render the muscles and skin realistically.
Lesson Summary

Fig. 8 - 22
Lesson Summary

Fig. 8 - 23
Lesson Summary

Fig. 8 - 24