

## Vocabulary

scale  
hierarchical  
proportion  
foreshortening

# Scale

**S**cale is much like proportion, but there is a difference. Proportion refers to the relationship of one part to another. **Scale**, on the other hand, refers to *size as measured against a standard reference*, such as the human body. A 7-foot basketball player may not look tall next to other basketball players. The player will look tall, however, when you see him in scale—that is, compared with a crowd of people of average height.

In art there are two kinds of scale to consider. One is the scale of the work itself. The other is the scale of objects or elements within the design.

The pyramids of Egypt are of such large scale that people are overwhelmed by their size. These pyramids were designed to be large to express the eternal strength of Egypt.

Wall paintings inside a pyramid depict important people in a larger scale than less important people. The tomb painting *Nakht and Wife* (**Figure 10.8**) depicts stories about the priest Nakht and his wife. They watch their busy servants hunting, fishing, and farming on the priest's land. In the painting, the figures of the priest and his wife are much larger than the servants. *When figures are arranged in a work of art so that scale indicates importance*, the artist is

using **hierarchical proportion**. This arrangement disregards the actual size of figures and objects in order to indicate rank in a society. Use of scale to emphasize rank appears in the art of many cultures (see Figure 10.10, page 262).

Actual works of art are usually much larger or much smaller than they appear to be when you look at photographs of them. You may have seen photos with a human hand or a human figure added for the purpose of showing the size of the objects in relation to human scale. Without some sort of measure, no illustration in any book can convey the effect of the scale of a work of art.

Some works that seem monumental are really quite small in size. This is why the dimensions are always listed in the credit line of the work. Try to visualize the size of a work in relation to your size. Imagine how it would look if it were in the room with you.



▲ **FIGURE 10.8** The servants in this painting are not all the same size. Two figures are as large as the priest and his wife, some are half their size, and some are even smaller. The painting uses hierarchical proportion. The more important figures are larger than the less important figures.

Egyptian, Thebes. *Nakht and Wife*. Copy of a wall painting from the Tomb of Nakht. c. 1425 B.C. 2 × 1.5 m (6.5 × 5'). Egyptian Expedition of The Metropolitan Museum of Art, New York, New York. Rogers Fund, 1915 (15.5.19 e).

► **FIGURE 10.9** An ordinary clothespin takes on a whole new meaning when it is 45 feet tall and installed in a plaza in front of the Philadelphia City Hall.

Claes Oldenburg, *Clothespin*. 1976. Cor-Ten Steel. Height: 13.7 m (45'). Centre Square, Philadelphia, Pennsylvania.

Claes Oldenburg often uses scale to make you look at ordinary objects with a new perspective. He created a 45-foot-tall pair of binoculars, a soft saxophone that is 69 inches tall, and a 45-foot-tall clothespin (**Figure 10.9**). Can you imagine what it would feel like to stand in front of a clothespin that is over eight times taller than you?

Variations in scale within a work can change the work's total impact. For example, interior designers are concerned with the scale of the furniture that is to be placed in a room. The designer considers the scale of the space into which the furniture will be placed. The needs of the people who will use the space must also be considered. An oversized, overstuffed sofa would crowd a small room with a low ceiling. However, the same sofa would fit comfortably in a large hotel lobby with a four-story ceiling. The large scale of the lobby would make the size of the sofa look right.



## Activity

### Experimenting with Scale

**Applying Your Skills.** Create a small collage scene using magazine cutouts of people, furniture, and hand-held objects such as books, combs, pencils, hair dryers, and dishes. Arrange the cutouts on a small sheet of paper using realistic, accurate scale. All of the objects in the scene should be in scale with the people, and all of the people should be in correct proportion to each other. Use perspective techniques and arrange things in depth to create an accurate scale. Draw a background environment for the scene using water-base markers, colored pencils, or crayons.

**Computer Option.** Use digital hardware such as a camera, scanner, or video camera and accompanying software to capture a variety of photographs of people and objects. Use the Selection tool and Copy and Paste commands to assemble a computer collage that shows unrealistic scale. Apply the tools of your choice to manipulate the images. Images can be selected from many other sources such as a CD-ROM or the Internet. If you do not have these capabilities, use the drawing and painting tools of your choice to create a surrealistic scene.



▲ **FIGURE 10.10** In the art of the Benin people, symbolic proportions were used. Notice how large the head of the Oba (in the center of the work) is in proportion to the rest of his body.

Nigeria, Edo. Court of Benin. *Mounted King with Attendants*. Sixteenth to seventeenth centuries. Brass. Height: 47.9 cm (18<sup>7</sup>/<sub>8</sub>" ). The Metropolitan Museum of Art, New York. Gift of Mr. and Mrs. Klaus G. Perls, 1990. (1990.332).



▲ **FIGURE 10.11** Wilt Chamberlain, an NBA star, was a seven-time consecutive winner of the NBA scoring title from 1960 to 1966. He retired in 1974. Willie Shoemaker, an American jockey, won 8,833 races in his career and is considered the best rider in thoroughbred racing history. Chamberlain is over 7 feet tall, while Shoemaker is approximately 5 feet tall.

Annie Liebovitz. *Wilt Chamberlain and Willie Shoemaker*. Photograph.

## Drawing Human Proportions

In Western art, realistic representation of people has been the dominant style from the Renaissance to the twentieth century. However, many artists around the world use symbolic proportions rather than representational accuracy. To the Benin people of West Africa, the head represented life and intelligence. The prosperity of the Benin people depended on the head of the Oba, the divine ruler. In **Figure 10.10** the head of the Oba is one third of the whole body. This demonstrates its symbolic importance.

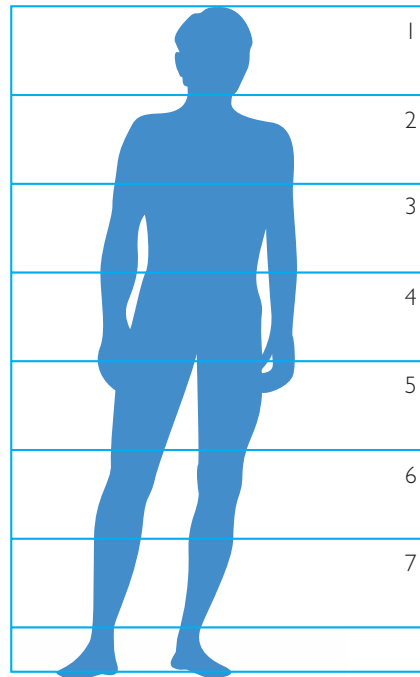
## Figures

People come in a variety of sizes and shapes. Categories for clothes sizes—husky, petite, tall—are just one indication of the many different shapes and sizes of people.

Although they vary in height and width, most people do not vary with regard to proportion. Many basketball players, such as Wilt Chamberlain, are tall. Jockeys, such as Willie Shoemaker, are usually small and light. In **Figure 10.11**, notice that Chamberlain's arms, legs, and torso have the same proportions as those of Shoemaker. Body proportions cannot be defined in inches or

centimeters. They can only be defined in ratios of one part of the body to another.

The unit usually used to define the proportions of an individual figure is the length of the head from the chin to the top of the skull. The average adult is seven and one-half heads tall (**Figure 10.12**); a young child is five or six heads tall; and an infant is only three heads long. Many artists use adult proportions when drawing an infant, and the painting looks strange because the head is small in relation to the rest of the body. In Giotto's (**jot**-toe) painting *Madonna and Child* (**Figure 10.13**), the child looks like a miniature adult because of proportion.



◀ **FIGURE 10.12**  
Average body proportions.



◀ **FIGURE 10.13** Giotto was the first artist to make a flat surface appear three-dimensional by using shading. He was the first to attempt realism. The child in this painting looks awkward, like a little adult. This is because Giotto used incorrect proportions to depict the child.

Giotto. *Madonna and Child*. 1320–30. Paint on wood. 85.5 × 62 cm (33<sup>3</sup>/<sub>8</sub> × 24<sup>3</sup>/<sub>8</sub>"). National Gallery of Art, Washington, D.C. © 1998 Board of Trustees. Samuel H. Kress Collection.



◀ **FIGURE 10.14** Siqueiros used foreshortening in this painting to dramatically exaggerate his reach. It is as if the artist wants to grab everything he can. His hand becomes a burst of superhuman energy.

David Alfaro Siqueiros. *Self-Portrait (El Coronelazo)*. 1945. Pyroxylin on Masonite. 91 × 121 cm (35<sup>13</sup>/<sub>16</sub> × 47<sup>3</sup>/<sub>8</sub>”). Museo de Arte Moderno, Mexico City, Mexico. © Estate of David Alfaro Siqueiros. Licensed by VAGA, New York, NY/SOMAAP/Mexico City.

Sometimes an artist may purposely distort proportion to make a drawing look more realistic. If a person is pointing at you, the arm from the fingertips to the shoulder will look shorter than it actually is. In a painting, an artist will use a technique to visually shorten the arm. **Foreshortening** is to shorten an object to make it look as if it extends backward into space (**Figure 10.14**).

## Heads and Faces

As you read this section, look in a mirror or at a classmate to check the examples discussed.

The front of the head is approximately oval. No one has a head that is perfectly oval—some people have narrow chins, and some have square jaws.

A face is approximately symmetrical. It has a central vertical axis when viewed from the front (**Figure 10.15**). If the face turns away from you, the axis curves over the surface of the head. You can divide the head into four sections along the central axis. This is done by drawing three horizontal lines that divide the axis into four equal parts, as shown in Figure 10.15.

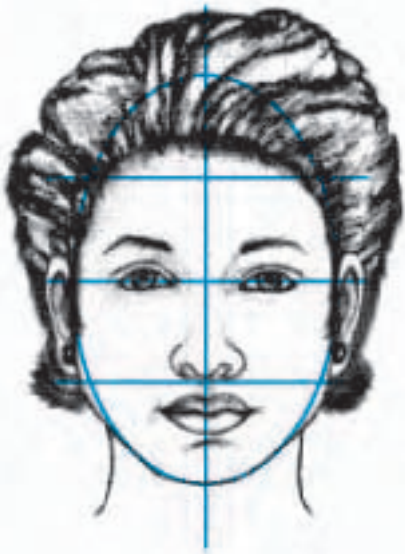
### Activity

### Human Proportions

**Applying Your Skills.** Use the length of your head (from the bottom of your chin to the top of your skull) as a unit against which to measure the rest of your body. In this way you can calculate the relationship, or ratio, of all parts of your body to your head. You may need a friend to help you obtain accurate measurements. Determine the number of head lengths that each of the following represents: total height, chin to waist, waist to hip, knee to ankle, ankle to bottom of bare heel, underarm to elbow, elbow to wrist, wrist to tip of finger, and shoulder to tip of finger. Record the ratios and create a diagram or chart to show your findings. Compare your findings with those of

your classmates. Find averages for the class, because the ratios will not be exactly alike.

**Computer Option.** Use video digitizing software and a video camera or a scanner to capture a variety of photographs of people and objects. Clip art and CD-ROMs can also be used. If you do not have these capabilities, use the drawing tools of your choice to create your images. Use the Selection tool and the Copy and Paste options to assemble a computer collage using unrealistic scale. Use the tools of your choice, such as Resize, to manipulate the images. Create a surrealistic scene.



▲ **FIGURE 10.15** Facial proportions.



▲ **FIGURE 10.16** Profile proportions.

The top fourth of the head is usually full of hair. The hair may start above the top horizontal line, or it may fall below it if the person wears bangs.

The eyes usually appear on the central horizontal line. They are at the center of a person's head. Notice the width of the space between the eyes. How does it relate to the width of one eye? The bottom of the nose rests on the lowest horizontal line, and the mouth is closer to the nose than to the chin. Use the sighting technique to determine other relationships, such as nose width, mouth width, and ear placement.

When you view a head in complete profile, or from the side, all of the vertical proportions remain the same as in the front view. However, both shape and contour change. Try to discover the new ratios (**Figure 10.16**). Notice the relationship between the distance from the chin to the hairline and the distance from the front of the forehead to the back of the head. Can you find a ratio to help you locate the ear in profile? Study the contour of the front of the face. Which part protrudes the most? Notice the jawline from the chin to the ear and the relationship of the neck to the head. In **Figure 10.17**, the artist has drawn



▲ **FIGURE 10.17** The center face in this drawing is a young woman whom Gauguin painted on his first visit to Tahiti. These serene faces with blank eyes look like ancient stone heads sculpted in Egypt or Mexico. The local Tahitian people were the inspiration for many of Gauguin's paintings.

Paul Gauguin. *Tahitians*. c. 1891–93. Charcoal on laid paper. 41 × 31 cm (16<sup>1</sup>/<sub>8</sub> × 12<sup>1</sup>/<sub>4</sub>”). The Metropolitan Museum of Art, New York, New York. Purchase, The Annenberg Foundation Gift, 1996. (1996.418).

both the front and two profile views of a woman's head.

Notice that the facial proportions of infants are different, as shown in the print by Bonnard (**Figure 10.18**).



▲ **FIGURE 10.18** Even though Bonnard has flattened and simplified this work, the differences in the proportions between the profile of the father and the infant are easily measured. The skull of the infant is very large, and the baby's features seem to be squeezed down into the lower part of the head.

Pierre Bonnard. *Family Scene*. From an album of *L'Estampe Originale*. 1893. Color lithograph on heavy cream wove paper. 31 × 17.8 cm (12<sup>1</sup>/<sub>4</sub> × 7"). The Metropolitan Museum of Art, New York, New York. Rogers Fund, 1922. (22.82.1-3). © Artists Rights Society (ARS), New York/ADAGP, Paris.

## Activity

## Drawing the Head

**Creating Visual Solutions Using Direct Observation.** Improve your observation skills. Look through magazines for large photographs of heads. Look for adults, children, and babies. Remember that a head is not flat, and when it is turned, the central axis moves and curves around the shape of the head. You can always find the axis because it goes through the center of the nose, lips, and between the eyes. Draw the central axis and the three horizontal dividing lines on each face. What are the proportional differences among the faces of adults, children, and infants?

**Computer Option.** Gather some pictures of the faces of adults, children, and babies. Notice that facial proportions change with age. Use the drawing tools of your choice to draw a human face using average facial proportions. Save your work. Use the Selection tool and the Copy and Paste options to duplicate the first face you drew. To experiment with the size of facial features, use the Selection tool to select the features of the face but not the outline of the head itself. Use the Resize option to create the correct feature size for a young child. Save your work. Reduce the size even more to create the correct feature size for an infant. The features need to be small and in the lower third of its face. If possible, save all three faces on the same screen. Finally, compare the three faces you have created.



## Check Your Understanding

1. What is scale?
2. What are the two kinds of scale present in a work of art?
3. Describe hierarchical proportion.
4. How does the credit line help you understand the scale of an artwork?
5. Explain foreshortening.