

Laboratory Exercise

17

Pelvic Girdle and Lower Limb

Materials Needed

Textbook
Human skeleton, articulated
Human skeleton, disarticulated
Male and female pelvises

For Learning Extension:

Colored pencils

The pelvic girdle includes two hip bones that articulate with each other anteriorly at the symphysis pubis and posteriorly with the sacrum. Together, the pelvic girdle, sacrum, and coccyx comprise the pelvis. The pelvis, in turn, provides support for the trunk of the body and provides attachments for the lower limbs.

The bones of the lower limb form the framework of the thigh, leg, and foot. Each limb includes a femur, a patella, a tibia, a fibula, seven tarsals, five metatarsals, and fourteen phalanges.

Purpose of the Exercise

To examine the bones of the pelvic girdle and lower limb and to identify the major features of these bones.

LEARNING OUTCOMES

After completing this exercise, you should be able to

1. Locate and identify the bones of the pelvic girdle and their major features.
2. Locate and identify the bones of the lower limb and their major features.

EXPLORE

Procedure A—The Pelvic Girdle

1. Review the section entitled “Pelvic Girdle” in chapter 7 of the textbook.
2. As a review activity, label figures 17.1 and 17.2.

3. Examine the bones of the pelvic girdle and locate the following:

hip bone (coxal bone; pelvic bone; innominate)

acetabulum
ilium
iliac crest
iliac fossa
sacroiliac joint
anterior superior iliac spine
posterior superior iliac spine
greater sciatic notch
lesser sciatic notch
ischium
ischial tuberosity
ischial spine
pubis
symphysis pubis
pubic arch
obturator foramen

4. Complete Part A of Laboratory Report 17.

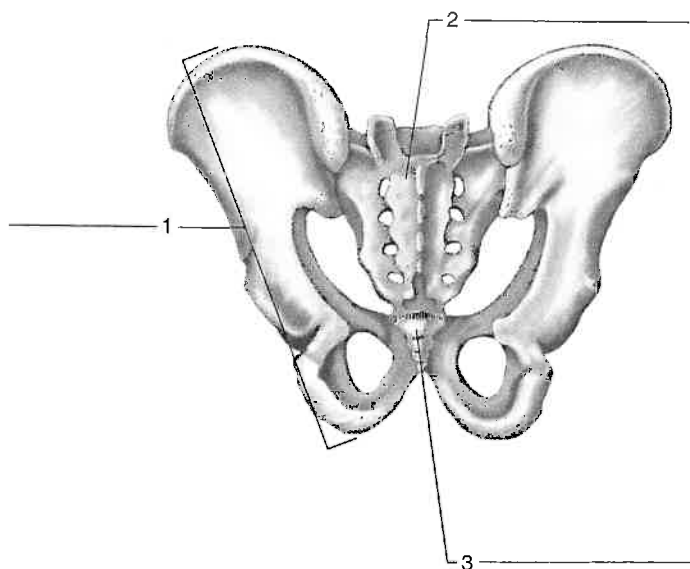


Figure 17.1 Label the bones of the pelvis (posterior view). 1

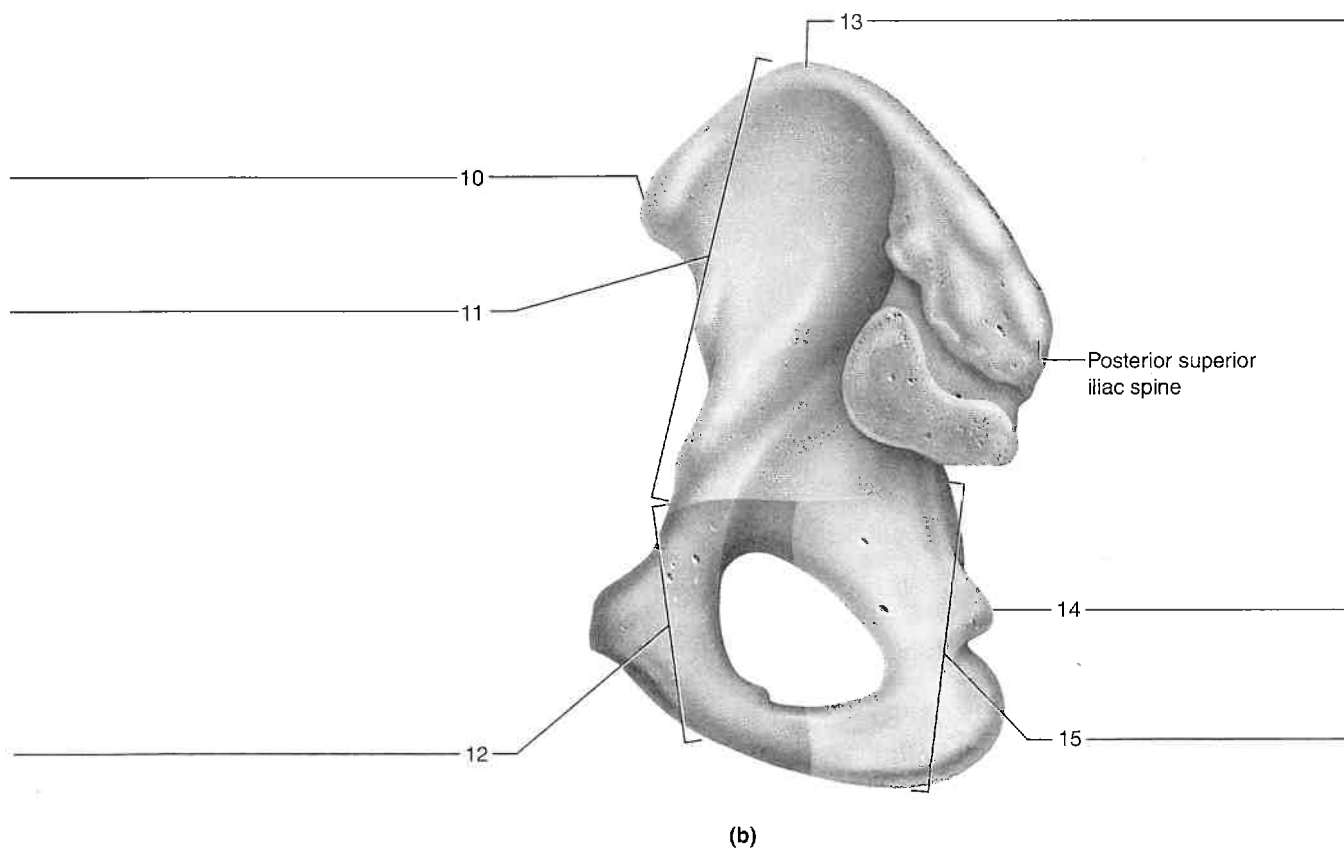
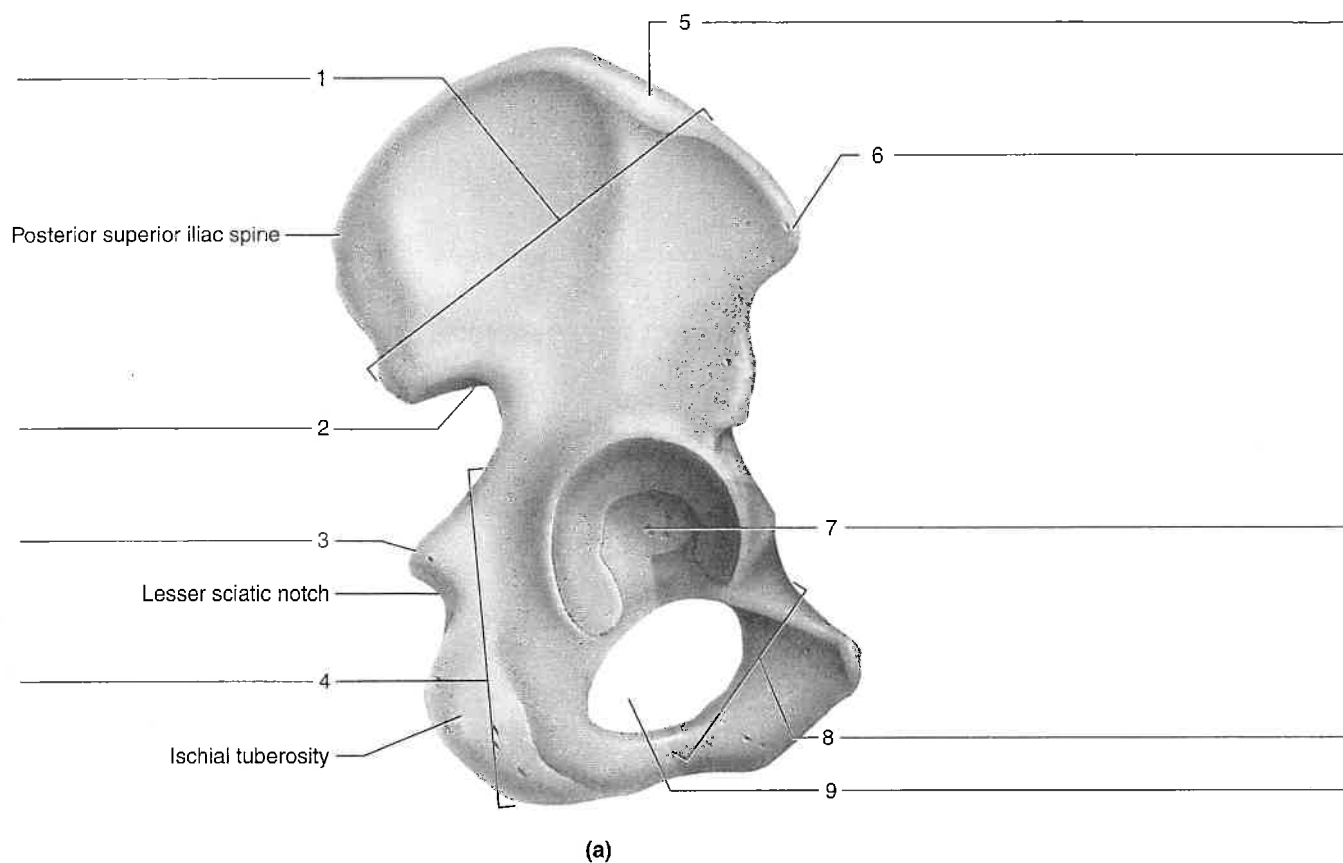



Figure 17.2 Label (a) the lateral and (b) the medial features of the right hip bone. 



Critical Thinking Application

Examine the male and female pelves. Look for major differences between them. Note especially the flare of the iliac bones, the angle of the pubic arch, the distance between the ischial spines and ischial tuberosities, and the curve and width of the sacrum. In what ways are the differences you observed related to the function of the female pelvis as a birth canal?

EXPLORE



Procedure B—The Lower Limb

1. Review the section entitled “Lower Limb” in chapter 7 of the textbook.
2. As a review activity, label figures 17.3, 17.4, 17.5, and 17.6.

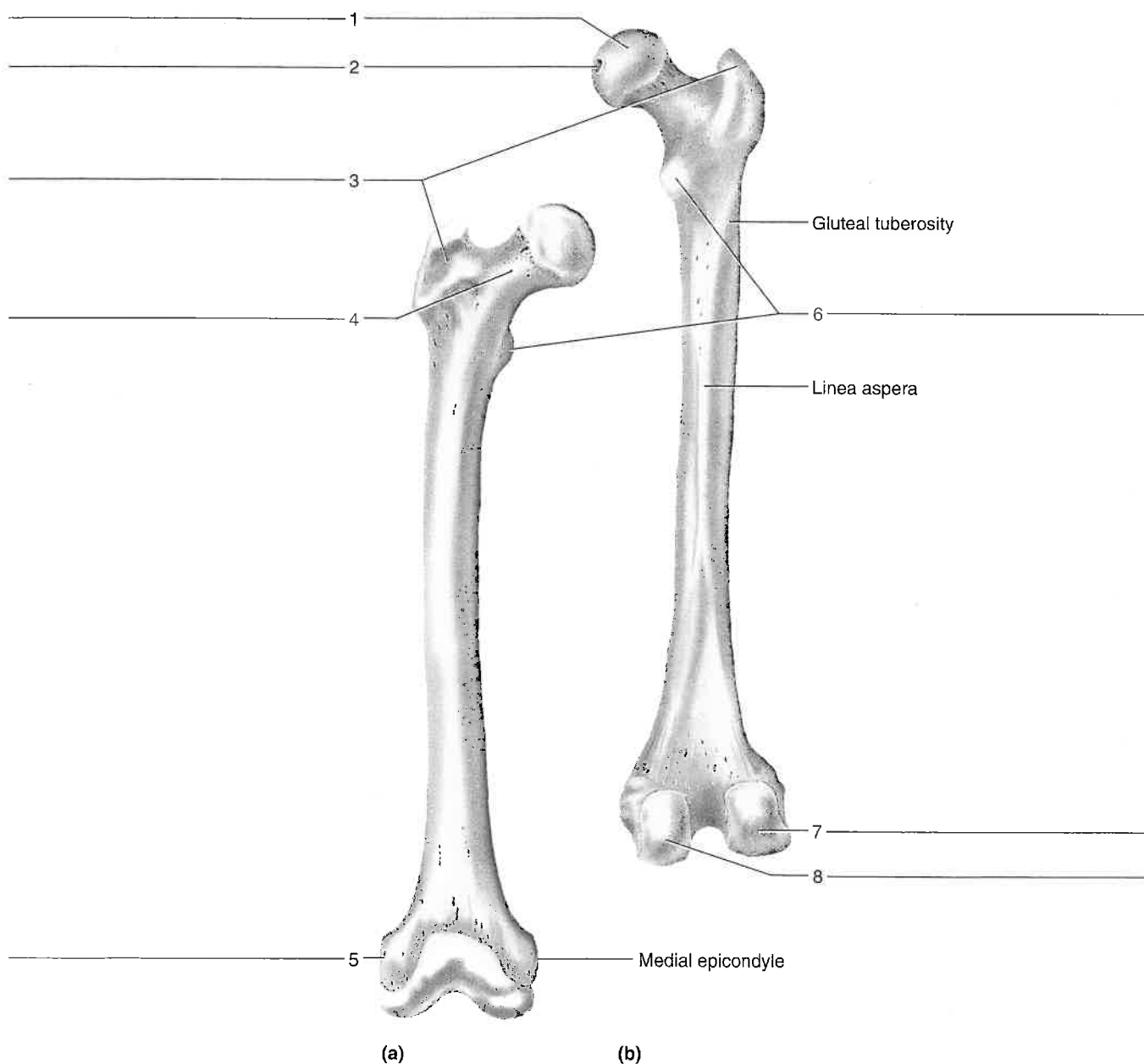


Figure 17.3 Label the features of (a) the anterior surface and (b) the posterior surface of the right femur. **2**

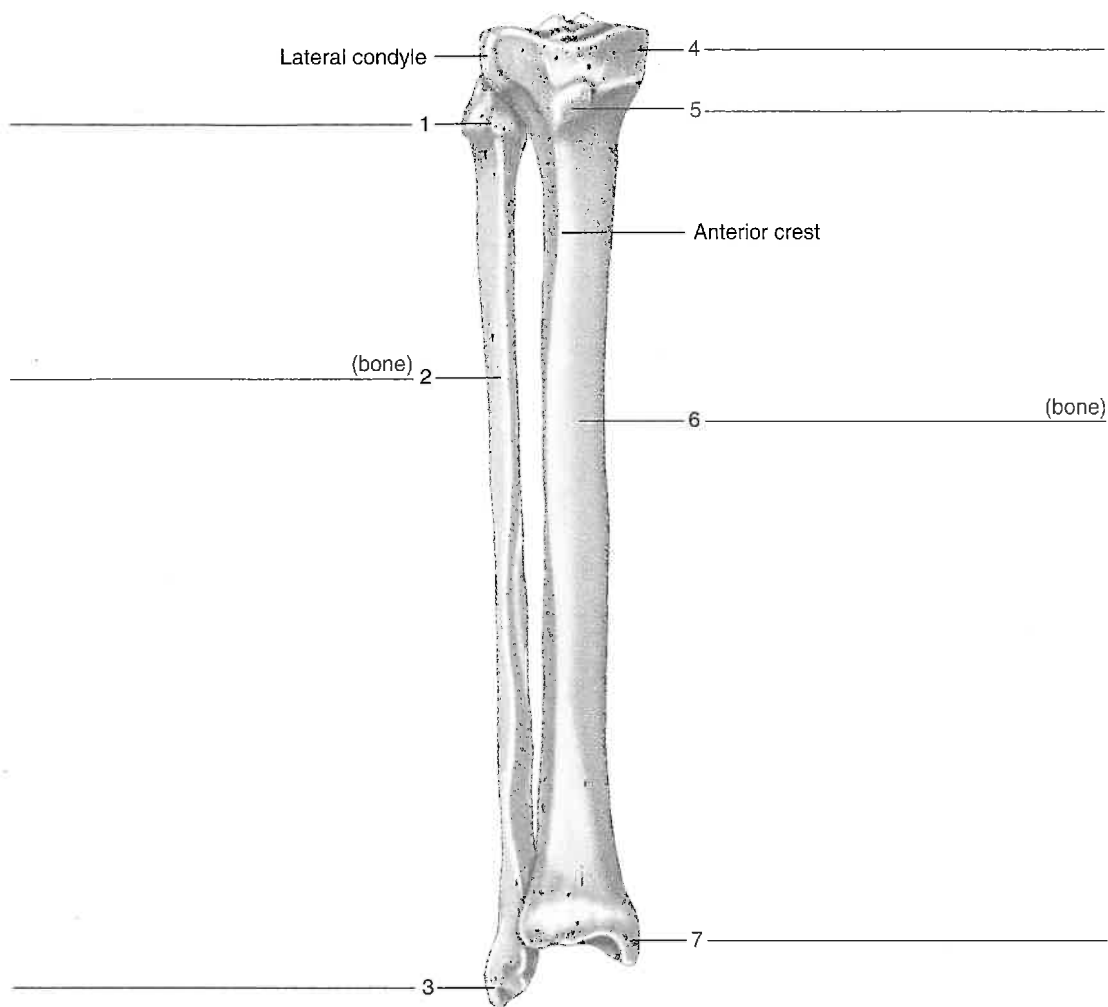


Figure 17.4 Label the bones and features of the right tibia and fibula in this anterior view. **2**

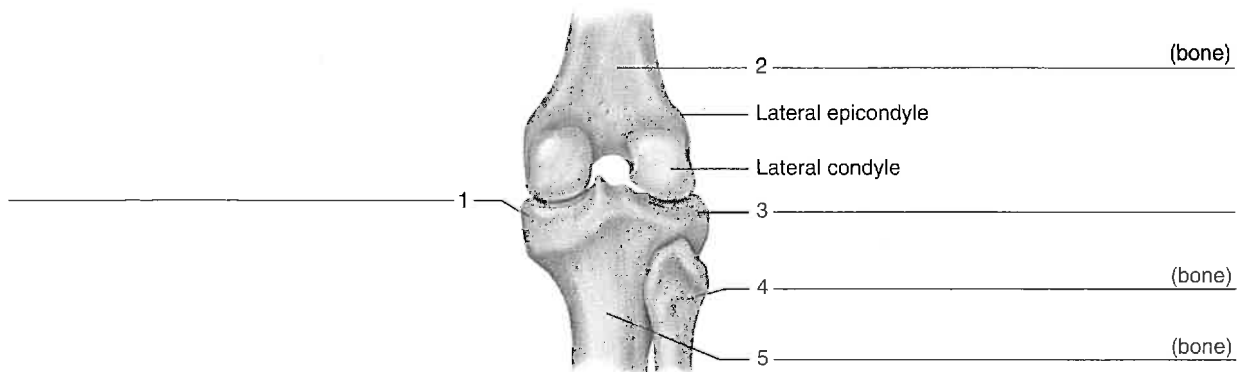


Figure 17.5 Label the bones and features of the right knee, posterior view. **2**

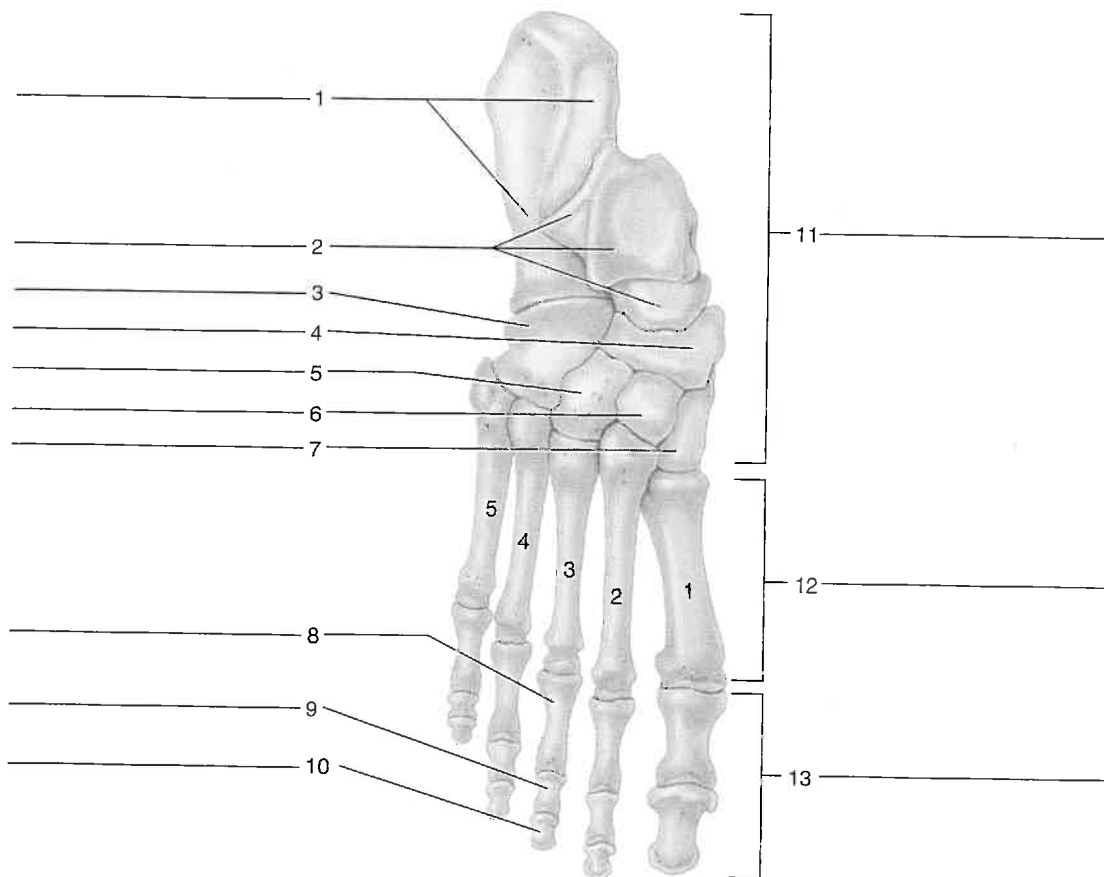



Figure 17.6 Label the bones of the superior surface of the right foot. 

3. Examine the bones of the lower limb and locate each of the following:

femur

proximal features

head

fovea capitis

neck

greater trochanter

lesser trochanter

shaft

gluteal tuberosity

linea aspera

distal features

lateral epicondyle

medial epicondyle

lateral condyle

medial condyle

patella

tibia

medial condyle

lateral condyle

tibial tuberosity

anterior crest (border)

medial malleolus

fibula

head

lateral malleolus

tarsal bones

talus

calcaneus

navicular

cuboid

lateral cuneiform

intermediate cuneiform

medial cuneiform

metatarsal bones

phalanges

proximal phalanx

middle phalanx

distal phalanx

4. Complete Parts B, C, and D of the laboratory report.



Learning Extension

Use different colored pencils to distinguish the individual bones in figure 17.6.