

THE PIECES OF THE BODY PUZZLE

A Regional Approach



ASSESSMENT CATEGORIES

-  Application
-  Communication
-  Knowledge and Understanding
-  Thinking

Activities in this chapter:

1

The Axial Skeleton 32

Review Your Key Terms
Head and Neck Region
Back Region

2

The Appendicular Skeleton 36

Review Your Key Terms
Pectoral Girdle
Muscles of the Scapulohumeral Region
Upper Limb

3

Check Your Understanding 51

Pelvic Girdle
Bones of Lower Limb
Muscles of the Lower Limb
Joints of the Lower Limb

4

Chapter Culminating Assignment 53

1

THE AXIAL SKELETON (Textbook pages 56-63)

4.1.1 Review Your Key Terms

atlas
axis
calvaria
cervical vertebrae
coccyx
costal cartilage
erector spinae muscles
external oblique
false ribs
floating ribs
foramen
frontal bone
internal oblique

intervertebral discs
lacrimal bone
linea alba
lumbar vertebrae
mandible
manubrium
maxilla
nasal bone
occipital bone
orbicularis oculi
orbicularis oris
parietal bone
rectus abdomini

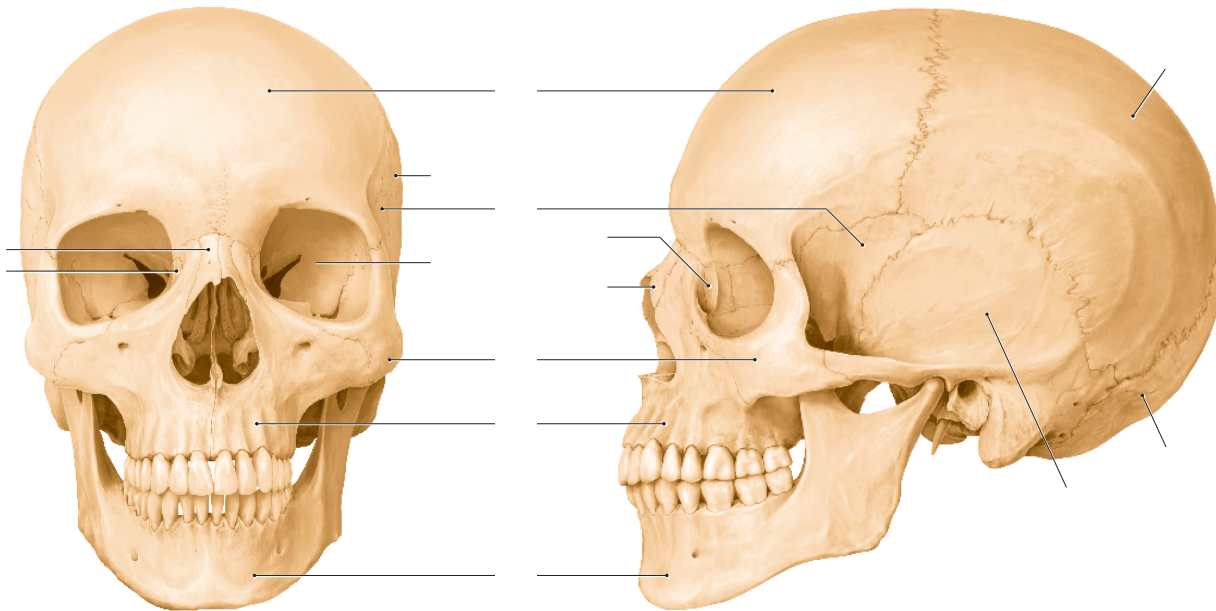
ribs
sacrum
sphenoid bone
sternal body
sternocleidomastoids
sternum
temporal bone
thoracic vertebrae
transversus abdominis
true ribs
xiphoid process
zygomatic bone

4.1.2 Head and Neck Region

(A) Anterior and Lateral Views of the Skull

Fill in the appropriate numbers on the figures below using the list of labels provided.

- | | | | |
|-----------------|------------------|-----------------|-------------------|
| 1 frontal bone | 4 maxilla | 7 orbit | 10 temporal bone |
| 2 lacrimal bone | 5 nasal bone | 8 parietal bone | 11 zygomatic bone |
| 3 mandible | 6 occipital bone | 9 sphenoid bone | |

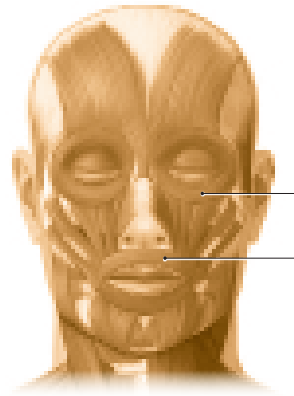


The curved flat bones of the skull form the _____, which is represented by labels _____ above. The most fragile of these bones is the _____.

(B) Facial Muscles

Two important facial muscles to remember are the orbicularis _____ and the orbicularis _____, which allow you to blink and chew, respectively.

Label these muscles on the figure to the right.



4.1.3 Back Region

(A) Regions of the Spinal Column

In the spaces provided, label the segments of the spinal column indicated on the figure to the right.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

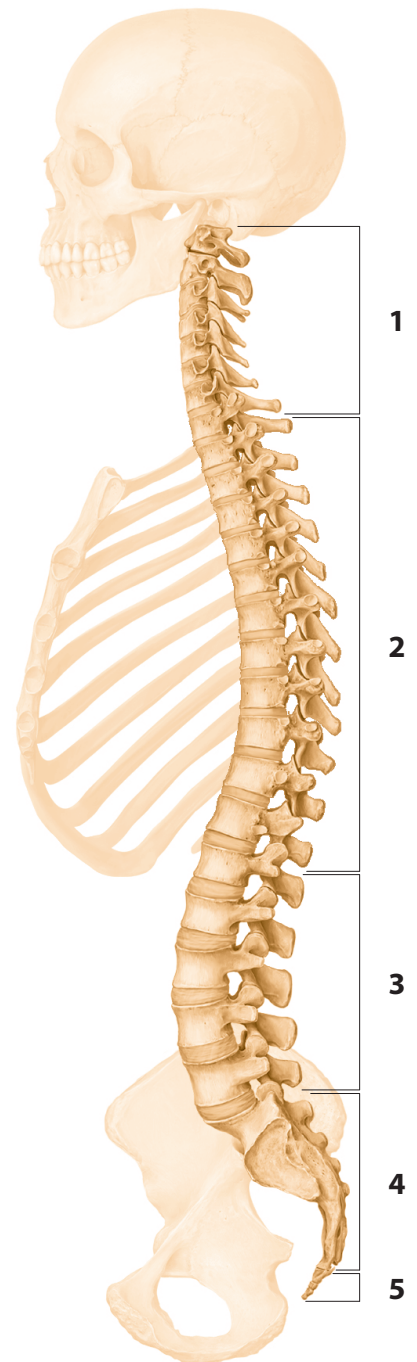
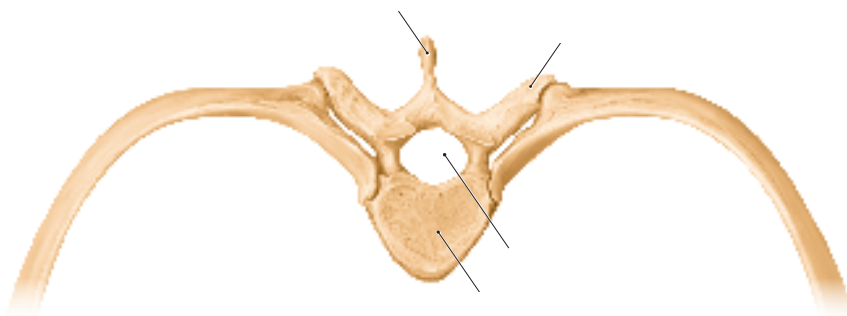
The vertebrae that make up the vertebral column are examples of which of the following types of bone (shape)?

- Flat
- Sesamoid
- Long
- Irregular
- Short

The *atlas* and *axis* are the first two _____ vertebrae. Color them in the figure on the right.

Fill in the appropriate labels below illustrating the structure of a typical thoracic vertebra. Can you locate these structures in the figure on the right?

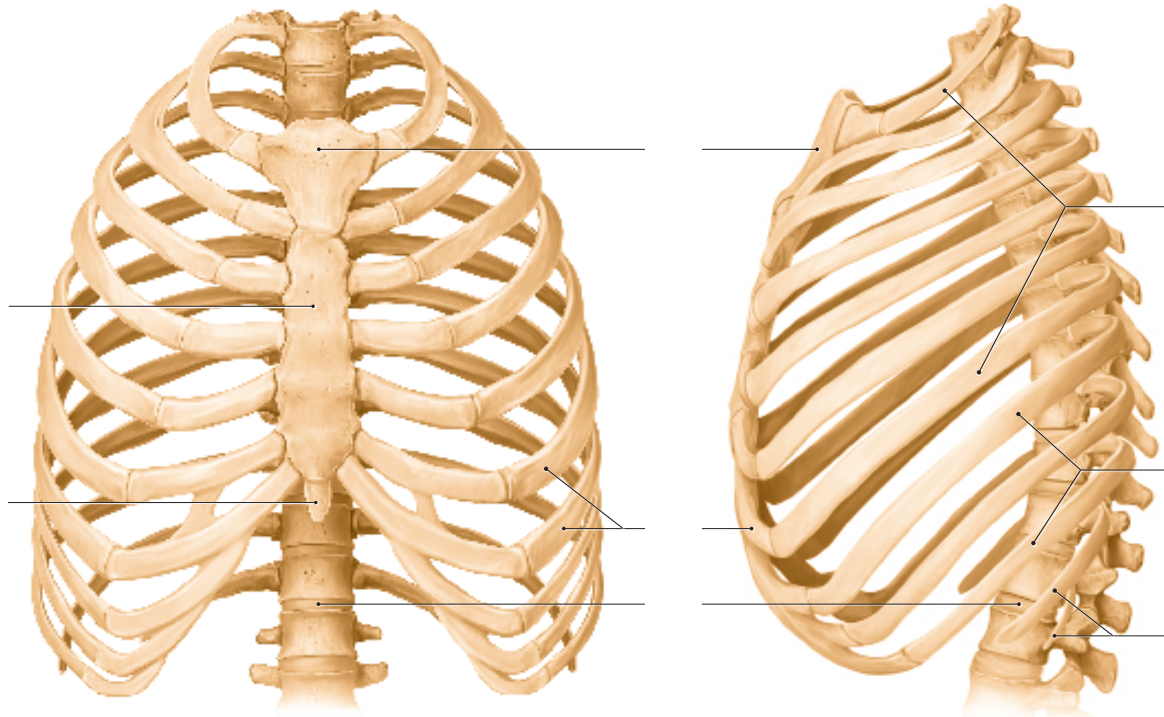
- 1 spinous process
- 2 transverse process
- 3 vertebral body
- 4 vertebral foramen



(B) The Rib Cage

From the list of labels provided, fill in the appropriate numbers on the figures of the rib cage below. The breastbone, represented by labels _____, is also known as the _____.

- 1 costal cartilage 3 floating ribs 5 manubrium 7 true ribs
- 2 false ribs 4 intervertebral disc 6 sternal body 8 xiphoid process

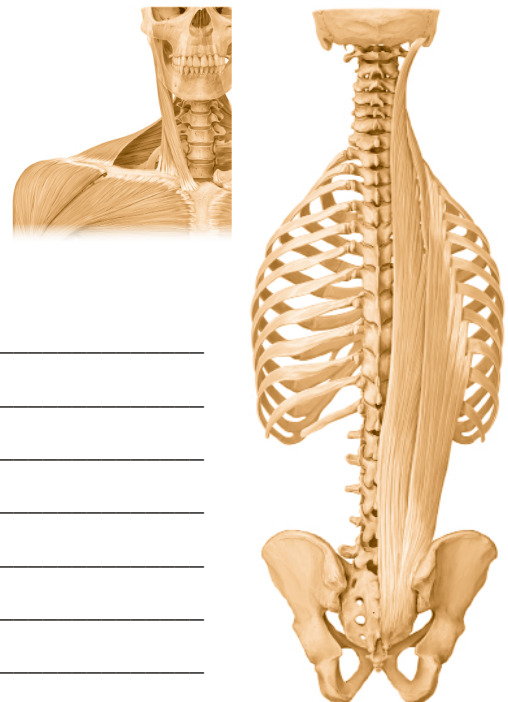


(C) Muscles of the Neck and Back

The anterior pair of neck muscles that allows you to flex your head toward your chest is the _____.

The large muscle mass that spans the back from the skull to the sacrum is called the _____.

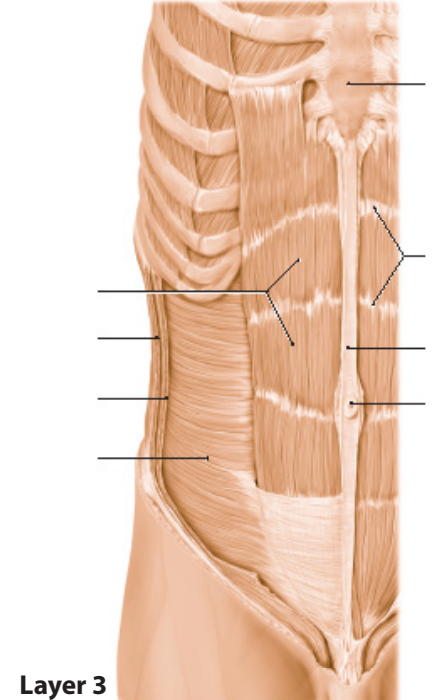
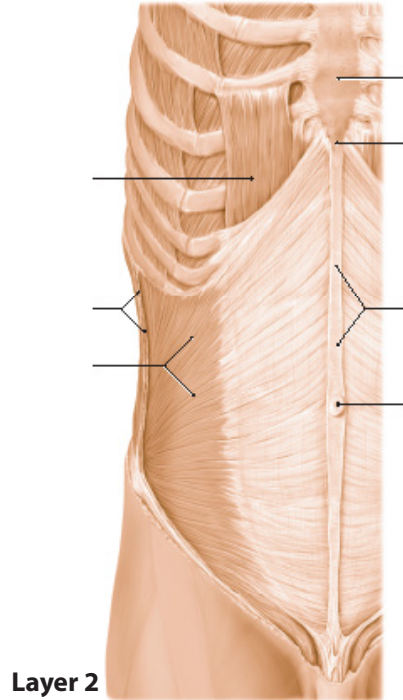
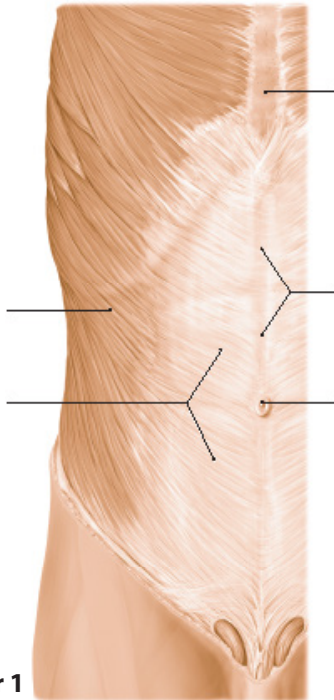
Briefly explain why these muscles are important for human movement.



(D) Muscles of the Abdomen

Complete the figures of the anterior abdominal wall below using the following labels.

- | | | | |
|--------------------|--------------------|---------------------------|--------------------|
| 1 external oblique | 4 rectus abdominis | 7 tendinous intersections | 10 xiphoid process |
| 2 internal oblique | 5 rectus sheath | 8 transversus abdominis | |
| 3 linea alba | 6 sternal body | 9 umbilicus | |



Which set of muscles would you use for lateral bending and rotation of the trunk? Give an example of an activity that would require these muscles.

List some exercises you can do to strengthen the abdominal muscles:

-
-
-
-
-

4.2.1 Review Your Key Terms

acetabulum
 Achilles tendon
 acromioclavicular joint
 adductor brevis
 adductor longus
 adductor magnus
 ankle (talocrural) joint
 anterior cruciate ligament
 biceps brachii
 biceps femoris
 brachialis
 brachioradialis
 calcaneus
 capitate
 carpals
 carpometacarpal joints
 carpus
 clavicle
 coracobrachialis
 cuboid
 cuneiforms
 deltoid
 extensor–supinator group
 femur
 fibula
 fibularis (peroneus) brevis
 fibularis (peroneus) longus
 flexor digitorum longus
 flexor hallucis longus
 flexor–pronator group
 gastrocnemius
 gluteus maximus
 gluteus medius
 gluteus minimus
 gracilis
 hamate
 hamstrings
 hip (iliofemoral) joint
 hip bone (os coxae)
 humeroradial joint
 humeroulnar joint

humerus
 hypothenar muscles
 iliacus
 iliopsoas
 iliotibial band
 ilium
 infraspinatus
 intercarpal joints
 intermetacarpal joints
 interossei muscles
 interosseous membrane
 interphalangeal joints
 ischium
 knee (tibiofemoral) joint
 lateral collateral ligament
 lateral malleolus
 latissimus dorsi
 levator scapulae
 lumbrical muscles
 lunate
 medial collateral ligament
 medial malleolus
 menisci
 metacarpals
 metacarpophalangeal (MCP) joints
 metatarsals
 midcarpal joint
 navicular
 patella
 pectineus
 pectoral girdle
 pectoralis major
 pectoralis minor
 pelvic girdle
 phalanges
 pisiform
 plantaris
 popliteus
 posterior cruciate ligament
 proximal radioulnar joint
 psoas major

psoas minor
 pubic symphysis
 pubis
 quadriceps femoris
 radiocarpal joint
 radius
 rectus femoris
 rhomboid muscles
 rotator cuff
 sacroiliac joint
 sartorius
 scaphoid
 scapula
 semimembranosus
 semitendinosus
 serratus anterior
 shoulder (glenohumeral) joint
 soleus
 sternoclavicular joint
 subscapularis
 supraspinatus
 talus
 tarsals
 tarsus
 tensor fasciae latae
 teres major
 teres minor
 thenar muscles
 tibia
 tibialis anterior
 tibialis posterior
 transverse tarsal joint
 trapezium
 trapezius
 trapezoid
 triceps brachii
 triquetrum
 ulna
 vastus intermedius
 vastus lateralis
 vastus medialis

Can you define most of the key terms listed here? Highlight the key terms you don't know, and look them up in the chapter or in the glossary at the back of the textbook.