The Appendicular Skeleton

The 126 bones of the appendicular skeleton are primarily concerned with movement.
Appendages to the central skeleton
Includes bones of the upper and lower limbs (including the girdles that attach them to the axial skeleton).

The Shoulder Girdle

The triangular shaped scapula is also called the shoulder blade.
Spine - a large process on the posterior of the scapula
Acromion - the flattened lateral portion of the spine
Coracoid process - a protruding projection on the anterior surface just inferior to the lateral aspect of the clavicle
Glenoid cavity - shallow concavity that articulates with the head of the humerus

The Forearm

The two bones of the forearm are the radius and ulna:
The radius is lateral (in anatomic position) and widens distally.
Radiates outward
The more medial ulna widens proximally into the Olecranon process, a large prominence we feel as the tip of the elbow.

The Hand

Each finger, with the exception of the thumb (pollex), or 1st digit, is composed of 3 phalanges:
proximal phalanx
middle phalanx
distal phalanx
The joints of the hand include the carpometacarpal,
metacarpophalangeal, and interphalangeal joints.

The Pelvic Girdle

On the right and left sides, the os coxae are joined posteriorly to the sacrum, and anteriorly to one another at the pubic symphysis (made of fibrocartilage).
The free part of the lower limb below the hip joint is composed of 30 different bones.

The Pelvic Girdle

The pubis is the anterior and inferior part of the hip bone.
It has superior and inferior rami and a body.

The Pelvic Girdle

The true pelvis is the bony pelvis inferior to the pelvic brim. It has an inlet, an outlet, and a cavity.
The pelvic axis is the path of childbirth during the first and second stages of labor.

The Thigh

The femur is the longest, heaviest, and strongest bone in the entire body.
Proximally, the head articulates with the acetabulum of the hip bone forming the hip (coxal) joint.
The neck (distal to head) is a common site of femoral fracture.
Distally, the medial and lateral femoral condyles articulate with the tibia to form the knee joint.
The femur also articulates with patella.

The Thigh

At the distal femur, the patella forms the patellofemoral joint where it functions to increase the leverage of the quadriceps muscles.
Runner's knee (patellofemoral stress syndrome) is a common sports injury.
Commonly known as patellar tendonitis

The Leg

The tibia and fibula articulate with the talus bone of the ankle to form the ankle "mortise" (ankle joint).

The Foot

Each toe with the exception of the hallux (big toe) is composed of 3 phalanges:
-proximal phalanx
-middle phalanx
-distal phalanx
The joints of the foot include the tarsometatarsal, metatarsophalangeal, and interphalangeal joints.

The Upper Limb

Based on the position of its major joints and component bones, the upper limb is divided into the shoulder, arm, forearm, and hand:
The shoulder is the area of upper limb attachment to the trunk.
The arm (brachium) is the part of the upper limb between the shoulder and the elbow joint.
The forearm (antebrachium) is between the elbow and the wrist.
The hand is distal to the wrist.

The Shoulder Girdle

The clavicle is "S" shaped:
The medial end articulates with the manubrium of the sternum forming the sternoclavicular joint.
The lateral end articulates with the acromion forming the acromioclavicular joint.

The Forearm

There is a proximal radioulnar joint and a distal radioulnar joint.
Proximally, the head of the radius articulates with the radial notch of the ulna.
Distally, the head of the ulna articulates with the ulnar notch of the radius.

The Lower Limb

The lower limb is directly anchored to the axial skeleton by a sacroiliac joint which links the pelvic bone to the sacrum.
Based on the position of its major joints and component bones, the lower limb is divided into the gluteal region (the major bones forming the hip girdle), thigh, leg, and foot.
The gluteal region is between the iliac crest and hip joint.
The thigh is between the hip and the knee joint.
The leg is between the knee and the ankle.
The foot is distal to the ankle.

The Pelvic Girdle

The ilium is the largest of the three hip bones - it forms the superior lateral prominence of the pelvis (iliac crest):
Consists of a superior ala and inferior body which forms part of the acetabulum (the socket for the head of the femur)
Greater sciatic notch allows passage of thesciatic nerve.

The Male/Female Pelvis

Compared to the female pelvis, the male pelvis:
Is larger, heavier, and more narrow
Has a smaller inlet and outlet
Has a pubic arch angle of < 90 degrees

The Thigh

The greater and lesser trochanters are projections where large muscles attach.
The gluteal tuberosity and linea aspera are attachment sites for the large hip muscles.

The Leg

Of the two bones in the leg, the tibia (always medial) is the largest and bears all the weight.
The lateral and medial condyles at the proximal end articulate with the femur.
It articulates distally with the talus of the ankle and the fibula.

The Foot

There are many similarities between the hand of the upper limb and the foot of the lower limb:
The ankle, or tarsus, is made up of 7 tarsal bones arranged to form the ankle mortise, heel, and arches.
The largest and strongest
-tarsal bone,
-the calcaneus,
-forms the heel.

The Lower Limb

The longitudinal and transverse foot arches support the weight of the body while providing spring and leverage to the foot when walking.
Flat feet occur when the arches decrease or “fall”.

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The Shoulder Girdle

The bones of the shoulder (pectoral) girdle include the scapula and the clavicle.
The shoulder joint also incorporates the upper part of the humerus.

The Arm

The only bone in the arm is the humerus.
The head of the humerus has two projections:
The greater tubercle lies more laterally.
The lesser tubercle lies more anteriorly.
Between the tubercles lies the intertubercular groove or sulcus (bicipital groove) where the long head of the biceps brachii tendon is located.

The Hand

The hand is composed of the wrist, the palm, and the fingers.
The wrist, or carpus, is made up of 8 carpal bones arranged in two rows.
The palm of the hand has 5 metacarpal bones

The Pelvic Girdle

In the gluteal region, the pelvic girdle is made up of two os coxae, or hip bones.
Each coxal (hip) bone consists of 3 bones that are fused together:
Ilium
Ischium
Pubis

The Pelvic Girdle

The ischium constitutes the inferior and posterior part of the hip bone.
It's most prominent feature is the ischial tuberosity - the part that meets the chair when you are sitting.

The Pelvic Girdle

The pelvic brim is a line from the sacral promontory to the upper part of the pubic symphysis.
The false pelvis lies above this line. It contains no pelvic organs except the urinary bladder (when full) and the uterus during pregnancy.

The Male/Female Pelvis

Compared to the male pelvis, the female pelvis:
Is rounder, has a flared iliac crest, and a wider pelvic
opening to assist childbirth. It also has a pubic arch angle of > 90 degrees and
a more movable pubic symphysis.
Has a more flexible coccyx

The Thigh

The femur has sites for attachment of the knee muscles at the medial and lateral epicondyles (above the femoral condyles).
The patella (knee cap) is the largest named sesamoid.
A thick articular cartilage lines the posterior surface.

The Leg

The fibula is the smaller, laterally placed bone of the leg:
It is non-weight bearing.
The head forms the proximal tibiofibular joint.
At the distal end, the lateral malleolus articulates with the tibia and the talus at the ankle.

The Foot

Like the palm of the hand, the sole of the foot has 5 bones – in this case called metatarsals.
The metatarsals also participate in forming the arches of the foot.