

III. SKELETAL SYSTEM

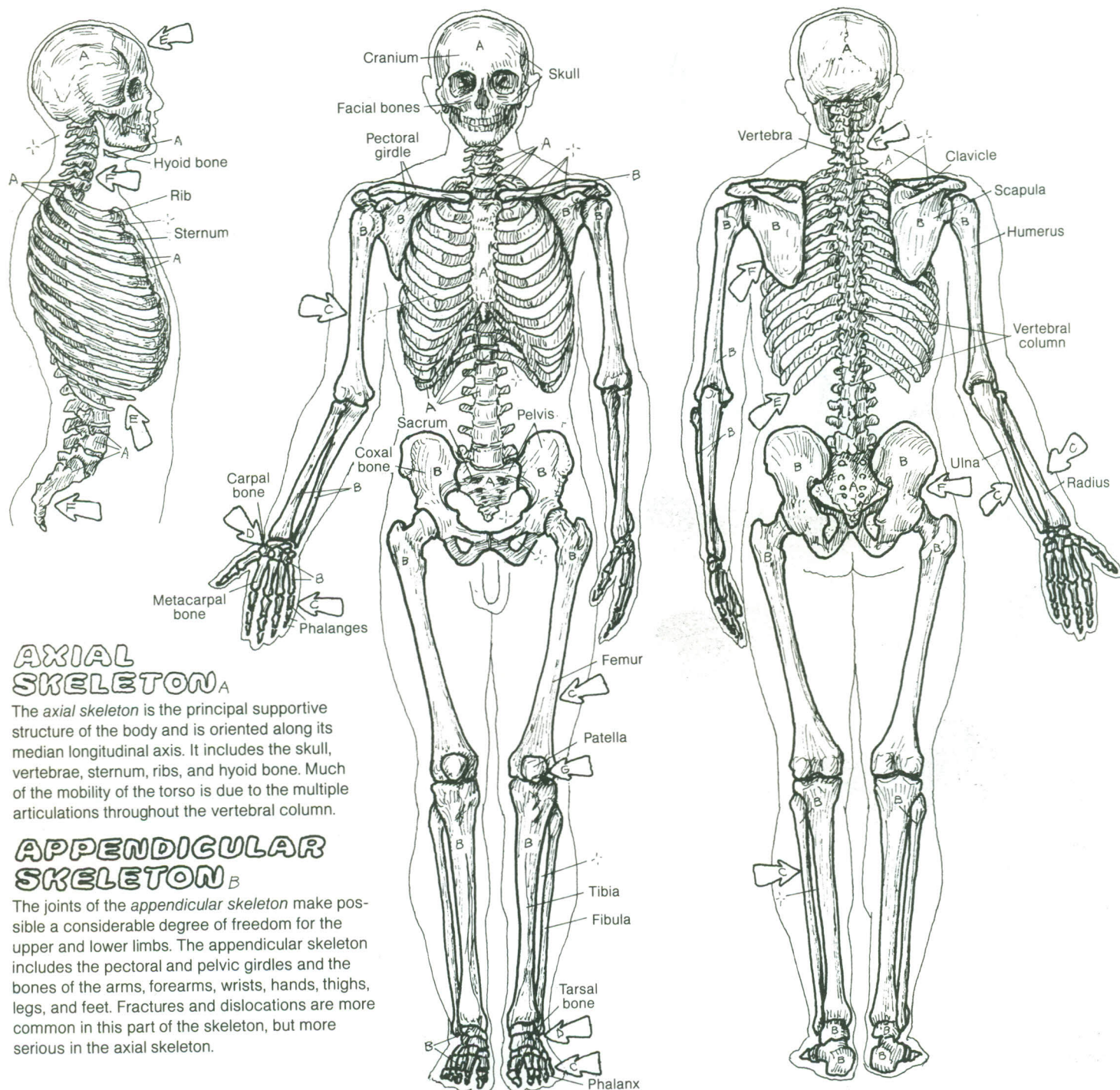
AXIAL/APPENDICULAR SKELETON

- CN: Use light but contrasting colors for A and B.
 (1) First color the axial skeleton A in all three views.
 Do not color the intercostal spaces.
 (2) Color the appendicular skeleton B.
 Note that the bones labeled A are drawn in a lighter line than B.
 (3) Color the arrows identifying bone shape/classification.

CLASSIFICATION OF BONES:*

LONG_C
 SHORT_D
 FLAT_E
 IRREGULAR_F
 SESAMOID_G

Bones have a variety of shapes and defy classification by shape; yet such a classification generally exists. *Long bones* are clearly longer in one axis than in another; they are characterized by a medullary cavity, a hollow diaphysis of compact bone, and at least two epiphyses; e.g., femur, phalanx. *Short bones* are roughly cube-shaped; they are predominantly cancellous bone with a thin cortex of compact bone; no cavity; e.g., carpal and tarsal bones. *Flat bones* (cranial bones, ribs) are generally more flat than round, and *irregular bones* (scapula, vertebrae) have two or more different shapes; e.g., the scapula, with a flat surface, and irregular-shaped spine. Bones not specifically long or short fit this latter category. *Sesamoid bones* are developed in tendons (e.g., patellar tendon); they are mostly bone, often mixed with fibrous tissue and cartilage. They have a cartilaginous articular surface facing an articular surface of an adjacent bone; they may be part of a synovial joint ensheathed within the fibrous joint capsule. They are generally pea-sized, and are almost always found in certain tendons/joint capsules in hands and feet, and occasionally in other articular sites of the upper and lower limbs. The largest is the patella, in the tendon of quadriceps femoris. Sesamoid bones resist friction and compression, enhance joint movement, and may assist local circulation.



AXIAL SKELETON_A

The *axial skeleton* is the principal supportive structure of the body and is oriented along its median longitudinal axis. It includes the skull, vertebrae, sternum, ribs, and hyoid bone. Much of the mobility of the torso is due to the multiple articulations throughout the vertebral column.

APPENDICULAR SKELETON_B

The joints of the *appendicular skeleton* make possible a considerable degree of freedom for the upper and lower limbs. The appendicular skeleton includes the pectoral and pelvic girdles and the bones of the arms, forearms, wrists, hands, thighs, legs, and feet. Fractures and dislocations are more common in this part of the skeleton, but more serious in the axial skeleton.

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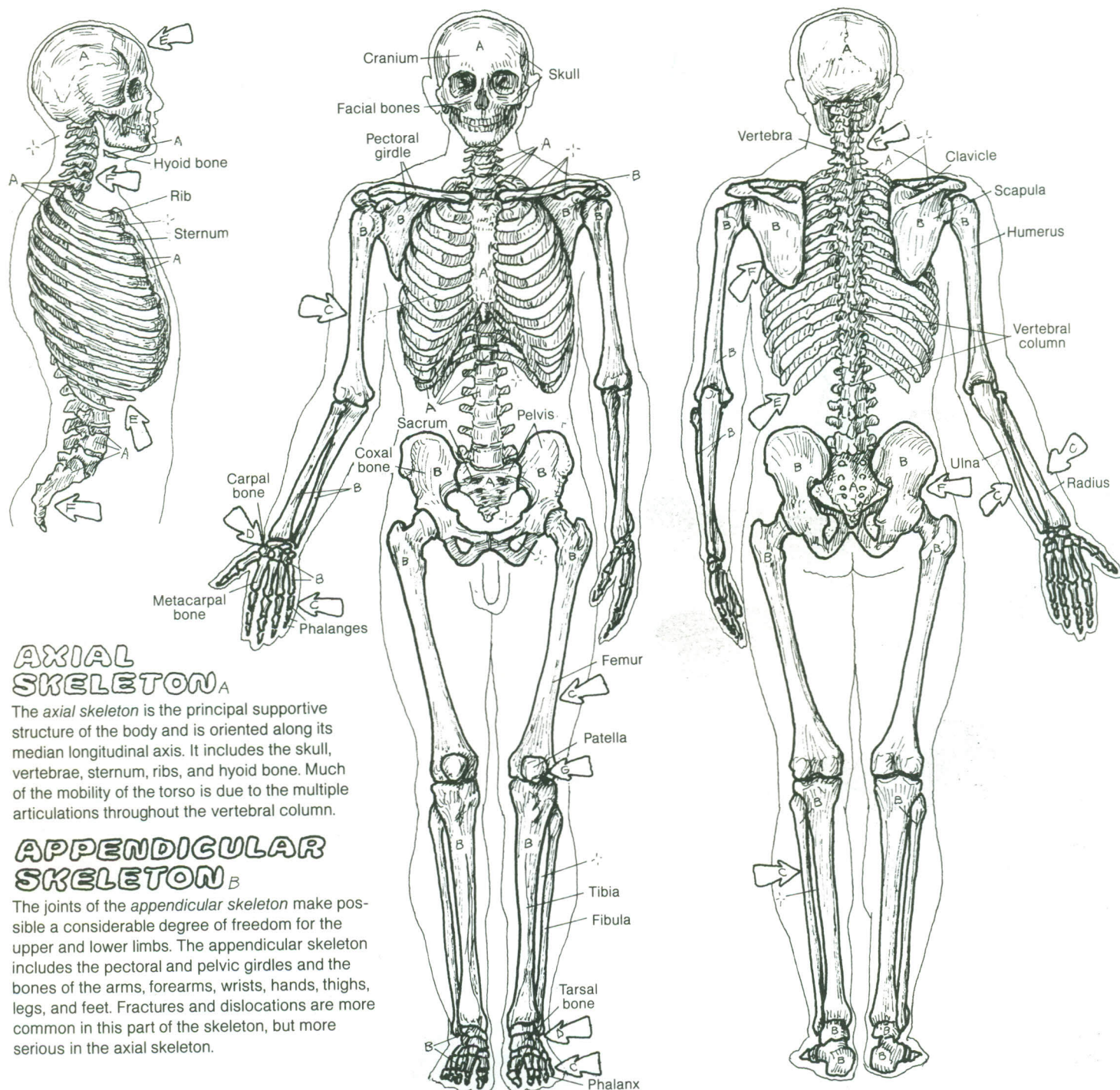
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