

The Axial Skeleton

EQ: List the bones in order from most superior to most inferior along the axial skeleton.

- I. The Axial Skeleton
 - a. Forms the longitudinal part of the body
 - b. Divided into three parts
 - i. Skull
 - ii. Vertebral column
 - iii. Bony thorax
- II. The Skull
 - a. Made up of both the cranium and the facial bones
 - b. Cranium
 - i. 8 Bones
 - ii. Frontal Bone
 1. Anterior portion above the eyes
 2. Separated from the parietal bone by the Coronal Suture
 - iii. Parietal Bones
 1. One each side of the skull just behind the frontal bone
 2. Separated from the frontal bone with the Coronal Suture
 3. Separated from each other by the Sagittal Suture
 4. Separated from the Occipital bone with the Lambdoidal Suture
 5. Separated from the temporal bone with the Squamosal Suture
 - iv. Temporal Bones
 1. Forms parts of the side of skull and base of cranium
 2. Separated from the parietal bones by the Squamosal Suture
 - v. Occipital Bone
 1. Forms the back of the skull and base of the cranium
 2. Separated from the parietal bones through the Lambdoidal Suture
 - c. Facial Bones
 - i. 14 Bones **Only learning 5 of the 14**
 - ii. Maxillae
 1. Forms upper jaw
 - iii. Zygomatic Bones
 1. More commonly known as Cheek bone
 - iv. Mandible
 1. Lower jaw
 2. Only moveable bone of the skull
 - v. The Hyoid Bone
 1. The only bone that does not articulate with another bone
 2. Serves as a moveable base for the tongue
- III. The Torso
 - a. The Vertebral Column
 - i. A series of bones running the length of the back and forming the central axis of the body is called the vertebral column or backbone.
 - ii. The individual bones of this column are called vertebra – plural is vertebrae.
 - iii. Development
 1. Humans are born with 33 vertebrae
 - a. Kids have more, as the sacral & coccygeal regions fuse to form the sacrum and coccyx.

- b. As adults we have 26 bones in the column
 - c. We divide vertebrae into groups based on their location
- iv. Group 1: The Cervical Vertebrae
 - 1. There are 7 vertebrae in the neck
 - 2. Top 2 Most Important
 - a. The Atlas or C-1
 - i. Is modified to support the skull.
 - ii. Is also called C1.
 - iii. Allows the “yes” motion
 - b. The Axis or C2
 - i. The skull and atlas rotate with the axis.
 - ii. The atlas rotates around the odontoid process. or dens
 - iii. The axis is also called C2,
 - iv. Allows “no” motion
- v. Group 2: Thoracic Vertebrae
 - 1. Inferior to the cervical vertebrae are the 12 Thoracic Vertebrae
 - 2. There are 12 thoracic vertebrae.
 - 3. They have facets to connect to the ribs. All ribs attach here
 - 4. Individual Vertebrae--5 Parts
 - a. Centrum
 - b. Vertebral foramen
 - c. Neural Arch
 - d. Transverse Process
 - e. Spinous Process
 - 5. The Ribs & Sternum
 - a. The chest or thorax contains the sternum, the costal cartilage, 12 pairs of ribs.
 - b. Counting the thoracic vertebrae the whole unit is called the thoracic cage.
 - c. The Sternum
 - i. 3 parts to the sternum
 - 1. Manubrium
 - 2. The Body
 - 3. The Xiphoid Process
 - d. The Ribs
 - i. There are 12 pairs of ribs.
 - ii. The first 7 pairs connect to the sternum by their costal cartilage and are called true ribs.
 - iii. The rest are called false ribs because they attach though one piece of cartilage.
 - iv. Pairs 11 & 12 don't connect to the sternum & are called floating ribs.
- vi. Group 3: Lumbar Vertebrae
 - 1. Next, the largest of the vertebrae, the Lumbar Vertebrae.
 - 2. The 5 Lumbar Vertebrae support most of the weight of the body.
- vii. Group 4: Sacrum
 - 1. The 5 fused or connected vertebrae that make up the Sacrum
 - 2. The Sacrum
 - a. In young children they are 5 separate bones.

- b. In adults they are fused into 1 single bone to attach the hips and legs.

viii. Group 5: Coccyx

1. The final, most inferior group of vertebrae are called the coccyx
2. The Coccyx
 - a. The coccyx usually consists of 4 fused bones.
 - b. They are also called the tail bone

IV. Curvature of the Spine

- a. You normally have 4 curves in your spine
- b. Kyphosis
 - i. With kyphosis, your spine may look normal or you may develop a hump.
- c. Hyperlordosis
 - i. A normal spine, when viewed from behind appears straight.
 - ii. However, a spine affected by lordosis shows evidence of a curvature of the back bones (vertebrae) in the lower back area
 - iii. giving the child a "swayback" appearance.
- d. Scoliosis
 - i. Scoliosis is an abnormal curvature of the spine.