Axial	relating to head, neck, and trunk
Skeleton	206 bones organized into structural framework
Appendicular	relating to limbs and their attachments to the axis
Function of Skeletal System	1. Movement 2. Protection 3. Support 4. Mineral Storage 5. Make Blood Cells
Abdominal	anterior body trunk region inferior to ribs

Axial skeleton	bones of the body's central axis skull, vertebral column, rib cage 80 bones
Acromial	point of the shoulder
Make blood Cells	Hematopoesis
Antebrachial	forearm
Appendicular skeleton	bones of upper and lower appendages and bones attaching them to the axial skeleton

Antecubital	anterior surface of elbow
End of bone	epiphysis
Axillary	armpit
Skull	Major regions: cranium and facial region
Brachial	arm

Shaft of Bone	Diaphysis
Buccal	cheek
Cranium	8 bones are flat and tightly fused to each other Roof = frontal bone, parietal bones and occipital bones
Carpal	wrist
Dense outer shell of bone	Compact Bone

Cervical	neck region
Facial bones	support several of the sensory organs of the head including eyes, ears, and nose
Coxal	hip
Spongy Bone	Cancellous Bone
Crural	leg

Sutures	immovable, jagged joints of cranium
Digital	fingers or toes
Arches of Spongy Bone	Trabeculae
Femoral	thigh
Frontal bone	forehead and anterior roof of cranium

Frontal	forehead
Thin epithelial tissue on bone	periostium
Parietal bones (2)	form posterior roof of cranium, and are arched flattened bones joined at their midline
Hallux	big toe
Weight of skeleton at adult size	35 - 45 pounds

Inguinal	groin
Occipital bones	form the posterior cranial floor
Mammary	breast
Mature bone cell	osteocyte
Mental	chin

suborbital foramen	opening through which nerves and blood vessels pass to the forehead. Site of frontal sinus
Nasal	nose
bone cell destroyer	osteoclasts
Oral	mouth
Frontal sinus	where air circulates and is "conditioned"

Orbital	bony eye socket
baby bone cells	osteoblasts
Palmar	palm of the hand
Foramen magnum	large hole in occipital bone through which the brain continues to the spinal cord.
Patellar	kneecap

bone-to-bone	ligaments
Pedal	foot
Pelvic	pelvis region
Occipital condyles	two rounded projections where the base of the skull meets the top of the vertebral column
Fibular (peroneal)	side of the leg

bone-to-muscle	tendons
Pollex	thumb
Temporal bones (2)	Lateral walls of cranium form part of internal floor of cranium
Pubic	genital region
Forehead	Frontal

Sternal	breastbone
External auditory meatus	Opening in the temporal bone brings sound waves into skull to inner ear
Tarsal	ankle
top sides of head	parietal
Thoracic	chest

Mastoid process	below each ear opening, point of attachment for many muscles of the neck
Umbilical	navel
back of head	occipital
Calcaneal	heel of foot
styloid process	pointed lies below external auditory meatus where pharyngeal and tongue muscles attach

Cephalic	head
sides of head	temporal
Dorsum	back
Mandibular fossa	depression wherer the temperalo bone articulates with a process of the mandible
Gluteal	buttocks

top jaw	maxilla(e)
Lumbar	lower back
Zygomatic process	Projection of the temporal bone that helps form the cheekbone
Manus	hand
bottom jaw	mandible

Occipital	back of head
Sphenoid bone	butterfly shape forms hte anterior internal floor of the cranium
Olecranal	posterior elbow
bony protrusion by the ear	mastoid process
Otic	ear

Sella turcica	Where pituitary gland lies saddle shaped depression in the sphenoid bone
Perineal	between anus and external genitalia
cheek bone	zygomatic (arch)
Plantar	sole of foot
Orbital fissure	slit in the top of sella turcica blood vessels and nerves pass through this slit

Popliteal	back of knee
Hole at base of skull	foramen magnum
Sacral	between the hips
ethmoid bone	small cranial bone separates nasal cavity from remainder of craniumolfactory nerve fibers pass from nose to brain through the ethmoid process
Scapular	shoulder blade

Suture between frontal and parietal	coronal suture
Sural	calf
Cribriform plates	two thin horizontal plates of bone called the cribriform plates
Vertebral	spinal column
suture between parietal and parietal	sagittal suture

Superior	above
Crista galli	Triangular process - projects upward between the cribiform plates
Inferior	below
suture between parietal and occipital	lambdoidal suture
Anterior	front

Fontanels	soft membranes on skulls of newborn before skull bones have fused together
Posterior	back
suture between temporal and parietal	squamosal suture
Medial	toward the midline or median plane
Fissure	slit between tow bones through which nerves or blood vessels pass

Lateral	away from the midline or median plane
tongue bone	hyoid bone
Cephalad (cranial)	toward the head
Foramen	hole within a bone through which nerves or blood vessels pass
Caudal	toward the tail

Muscles of tongue that change its shape	intrinsic
Dorsal	backside
Meatus	Tubelike passageway within a bone
Ventral	belly side
muscles that push tongue out	extrinsic

Proximal	nearer the trunk or attached end
Sinus	Cavity within a bone (opening)
Distal	farther from trunk or point of attachment
flap of skin that holds tongue in	lingual frenulum
Superficial (external)	toward or at the body surface

Fossa	simple depression or hollowing in or on a bone
Deep (internal)	away from the body surface
flap of skin that holds lips in	labial frenulum
Sulcus	groove that may contain a blood vessel, nerve, or tendon
# of cervical vertebrae	7

Condyle	Large convex protrusion at the end of a bone
# of thorasic	12
Head	Round protrusion separated from the rest of a bone by a neck
# of lumbar vertebrae	5
Facet	Flat, smooth surface

# of sacral vertebrae	5 - fused into 1
Crest	Prominent ridge on a bone (iliac)
# of caudal vertebrae	3-5 fused into coccyx
Epicondyle	Second protrusion above a condyle
sacro-iliac joint is made of:	hyaline cartilage

Line	less prominent ridge on a bone
invertebral disks are made of:	fibrocartilidge
Tubercle	Small round protrusion
superior end of sternum	manubrium
Tuberosity	Large, round and usually roughened protrusion (ischial tuberosity of coaxal bone)

middle of sternum	gladiolus
Trochanter	Large protrusion (greater trochanter of femur)
cats sternum is composed of	individual sternabrae
Face	Made up of 14 bones Provide attachment for chewing muscles and support other facial muscles
formal name for ribs	costals

Nasal bones	2 bones fused at midline - form the bridge of the nose
# of costals	12
Vomer bone (nasal septum)	divides nasal cavity into left and right
# of costals NOT connected to sternum	2
Inferior nasal conchae	plates that form side of nasal cavity

name of unconnected costals	"floating" ribs
Zygomatic bones	2 bones below eye sockets - support face, form part of cheekbones
purpose of "floating" ribs	to protect kidneys
Temporal process	projects to join zygomatic process at zygomatic arch
costal cartilage is made of:	hyaline

Zygomatic arch	where cheekbone is formed
2 places where elastic cartilage is found:	- inner ear - trachea
Lacrimal bones	near the medial corners of the eye Grooves in the bones permit tears to drain from the eye into the nasal cavity
Pectoral Girdle is composed of:	arms + shoulder + collar bone
Maxillae	2 bones that form upper jaw Fuse at midline contain maxillary sinuses

collar bone	clavicle
Palatine bones	forms floor of nasal cavity and lateral walls of nasal cavity
most frequently broken bone in body	clavicle
Mandible	lower jaw horseshoe shabed bone with hingelike joint
shoulder bone	scapula

Mandibular condyle	at eah end of mandible, projection extends upward articulates with mandibular fossa
socket of shoulder joint	glenoid fossa(e)
Mandibular fossa	one of the temporal bones
superior protrusion to shoulder joint	acromion process
Coronoid process	Attachment site for muscles of mastication (chewing)

bone of upper arm	humerus
Vertebral column	Backbone, spine Contains 26 vertebrae 7 cervical 12 thoratic 5 lumbar 1 sacrum 1 coccyx
pit on back of humerus that prevents arm from move than a 180 degree angle	Olecranal fossa(e)
sacrum	formed by the fusion of 5 sacral vertebrae
ulna's articulation point with humerus	olecranal

Coccyx	formed by the fusion of 4 coccygeal vertebrae
medial bone in arm	ulna
Intervertebral disks	Disks of fibrous cartilage with soft inner core absorb shocks and permit flexibility
lateral bone in arm	radius
Herniated disk	Disks bulge out of shape protrusion of the disk presses on the spinal cord or a nerve bringing pain and numbness

bone in arm with a round proximal head	radius
Scoliosis	Abnormal sideways spinal curve
# of wrist bones	8
Kyphosis	Exaggerated thoracic curve hunchback
wrist bones	carpals

Lordosis	exaggerated curve of lumbar area swayback
most medial carpal	pisiform
Body of vertebra	weight-bearing cylinder of bone between the disks
sesmoid of the wrist	pisiform
Vertebral arch	extends behind the body to enclose and protect the spinal cord as it passes through the opening to the arch

palm bones	metacarpals
Vertebral foramen	opening that spinal cord passes through
# of metacarpals	5
Spinous processes	near midline - sites of attachment
proper name for fingers	digits

Transverse processes	on either side of midline
# of phalanges per digit and total	3 for each finger 2 for thumb 14 total
Articular processes of vertebrae (superior and inferior)	Sites of attachment for back muscles and ligaments
formal name for thumb	pollex
Pedicles	2 short bony cylinders that project from the vertebral body toward the posterior and form the sides of the vertebral arch

The pelvic girdle is composed of:	the hips and legs
Intervertebral foramina	Openings in pedicles Nerves from spinal cord pass through as they extend to body tissues
Latin for "I have no name"	Innominate
Atlas	Cervical vertebra that balances and supports the head
name for full pelvic structure	innominate

Facets	two processes of atlas that articulate with occipital condyles
broad flat area of hip	illum
odontoid process (dens)	of axis - projects upward into ring of the atlas Joint where head rotates
most superior part of hip	illac crest
Thoracic cage	formed by sternum plus ribs

anterior (ventral) inferior hip bone	pubis
Manubrium	upper shield like portion of sternum
posterior (dorsal) inferior hip bone	ischium
body of sternum	central portion shaped like a dagger attached to most ribs
pad of cartilage between both pubis bones	pubic symphysis

Xiphoid process	forms lowermost part of sternum (point)
The pubic symphysis is made of:	fibrocartilage
Ribs	12 pair
hole made between pubis and ischium	obturator foramen
True ribs	first 7 pairs of ribs attach to sternum by strips of cartilage called hyaline costal cartilages

hip socket	acetabulum
Hyaline costal cartilages	strips of cartilage that connect first 7 pairs of ribs to sternum (ribs 8-10 have costal cartilages by merge with the 7the rib
gender with greater hip angle	female
Facets	flat sides of ribs
gender with lesser hip angle	male

False ribs	5 pairs of ribs not directly attached to sternum
purpose of obturator foramen	a passageway for nerves, arteries, and veins into leg
Floating ribs	Ribs 11 and 12 do not attach to sternum at all
longest, strongest, and heaviest bone in body	femur
Girdle	Appendages and bones connecting appendages to the axial skeleton

superior Lateral process of femur	greater trochanter
pectoral girdle	connects arm bones to the rib cage
superior medial process of femur	lesser trochanter
pelvic girdle	connects leg bones to the sacrum
inferior medial process of femur	medial epicondyle

scapula	large triangular bone connected to axial skeleton by muscles and ligaments posterior surface contains bony portion called spine
inferior lateral process of femur	lateral epicondyle
spine of scapula	bony suface on posterior of scapula leads to acromion process and coracoid process
formal name for knee cap	patella
Acromion process	forms tip of shoulder

3 "stony" bones	- pisiform - patella - sesmoid
Glenoid fossa	socket on narrow end of scapula to receive upper arm bone
larger foreleg bone	tibia
Clavicle	rod shaped bone that braces scapula against the top of the sternum
smaller foreleg bone	fibula

Humerus	upper arm bone - rounded head at upper end
lateral foreleg bone	fibula
Greater tubercle and Lesser tubercle	round protrusions below the head of the humerus Provide sites for muscles to attach
medial foreleg bone	tibia
Intertubercular groove	furrow lying between the greater and lesser tubercles

where patellar ligament attaches to a calf bone	tibial tuberosity
Deltoid tuberocsity	near center of humerus v shaped area where deltoid muscle attaches
type of cartilage patellar ligament is made of	hyaline
Condyles	2 at lower end of humerus, where lower arm bones, the ulma and radius articulate
# of tarsal bones per foot	7

Epicondyles	above condyles for muscle attachments
# of metatarsals per foot	5
Coronoid fossa	depression between the epicondyles that receives the coronoid process of the ulna
Location of tarsal bones	ankle
Olecranon fossa	Receives the olecranon process of the ulna

location of metatarsals	sole of foot
Radius	lateral bone of forearm thumb side articulates with the humerus at the head of the radius
heel bone	calcaneus
UlnaRadial tuberosity	medial bone of the forearm (little finger side) articulates with humerus at coronoid process and olecranon procss - process on the radius used for muscle attachments
formal name(s) for Achilles tendon	- tendocalcaneous - calcaneal tendon

Styloid process	at distal ends of the radius receives ligaments from the wrist
# of digits on each foot	5
Carpals	8 carpal bones in 2 rows of 4 each Pisiform, lunate, triangular, hamate, capitate, scaphoid, trapezoid, trapezium small size allows flexibility in wrist
# of phalanges per foot	14
Metacarpals	5 bones in the fleshy portion of the hand connects to carpals

formal name for big toe	hallux
Phalanges (phalanx)	Finger bones Thumb has 2 Fingers have 3
small inferior bone on metatarsal	sesmoid
os coxae (pelvic bones)	connected to sacrum by fibrous connective tissue Formed by fusion of 3 bones: ilium, ischium, nad pubis
purpose of sesmoid bone (of foot)	to balance

Iliac crest	The edge of the area we sit on
rounded top tarsal bone	talus
Sacroiliac joint	Where ilium joins the sacrum
bone where tibia articulates with foot	talus
Ischial tuberosity	Where ligaments and leg muscles attach

color of active blood cell producing tissue	red
Ischial spine	sharp projection lies above the tuberosity
color of inactive blood cell producing tissue	yellow
acetabulum	Cuplike socket where the head of the femur articulates
what makes yellow bone marrow yellow?	higher fat content

Pubic symphysis	midline joint where left and right pubic bones fuse flexible to allow passage of fetus
function of red bone marrow	to produce red and white blood cells (hematopoeisis)
Obturator foramen	Large opening between bodies of pubis and ischium exists for passage of nerves and blood vessels to the lower leg Skeleton's largest foramen
where is red bone marrow found?	in flat bones and spongy ends of bones
Femur	Upper leg bone joins pelvic girdle at acetabulum Head, neck, greater and lesser trochanter

Bone is made of (the compounds)	- Calcium Carbonate $CaCO_3$ - Calcium Phosphate $Ca_3(PO_4)_2$
Greater and lesser trochanter	two large protrusions on femur
Where is yellow bone marrow found?	inside hollow shaft of compact bone (diaphysis)
Lateral and medial condyle	2 rounded projections at lower end of femur Articulate with condyles of tibia
What is used as a basic buffer in blood?	CO_3^{-2} (from the $CaCO_3$ in bone)

Patella	kneecap, where femur meets lower leg bones
What is used as an acid buffer in blood?	H_2CO_3 - Carbonic Acid ($H_2O + CO_2$)
Tibia	larger lower leg bone on inside has lateral and medial condyle
Where cancellous bone is found?	ends of bones (epiphysis)
Tibial tuberosity	on front (anterior) side of tibia, attachment for patellar ligament

Medial malleolus	prominence on ankle, site for ligament attachment
Malleolar sulcus	Groove where blood vessels pass
Fibula	thin bone extending down the lateral portion of leg
Lateral malleous	lower end of leg where ligaments attach
Tarsals	7 - form ankle Talus, calcaneus, navicular, cuboid, laterial cuneiform, medial cuneiform, intermediate cuneiform

Metatarsals	forms instep
Phalanges	Toes
The bones of the upper and lower appendages comprise the	Appendicular skeleton
The movement of bones is controlled by the body's	skeletal muscles
The number of bones in the axial skeleton is	80

The number of bones in the cranium is	8
The cranial bones are fused together at immovable joints known as	sutures
The forehead and anterior roof of the cranium is formed by the	frontal bone
The posterior cranial floor is formed by	occipital bone
The occipital bone contains a large hole for passage of the spinal cord known as	foramen magnum

The bones that form the side walls of the cranium are	temporal bones
The mastoid process is the rounded process of the	temporal bone
The projection of the temporal bone that helps form the cheekbone is	zygomatic process
The cranial bone that has the shape of a butterfly and forms the anterior internal floor of the cranium is the	sphenoid bone
The two thin perforated horizontal plates of bone in the ethmoid bone form the	cribriform plate

The pituitary gland lies in a saddle-shaped depression ofthe sphenoid bone known as the	sella turcica
Membranous areas in the skullbone of a newborn are known as	Fontanels
The nasal cavity is divided into left and right chambers by a verticle partition known as	Vomer bone
Each zygomatic bone has a projection that helps form the cheekbone and is known as the	Temporal process
The smallest facial bones are the	lacrimal bones

The upper jaw is formed by two bones called	maxillae
The lower jaw bone is shaped as a horseshoe and is called the	mandible
The vertebral column is composed of 26 bones known as	vertebrae
The five sacral vertebrae fuse to one another to form the	sacrum
The vertebrae of the neck are known as	cervical vertebrae

The unfused vertebrae of the vertebral column are separated from one another by	intervertebral disks
An abnormal sideways curve of the spinal column is known as	scoliosis
The weight-bearing cylinder of the vertebral bone that is found between the disks is the	body
The spinal cord extends through the vertebral column by passing through openings in the vertebrae known as	vertebral foramena
The first vertebrae of the vertebral column is called the	atlas

The process of the axis that projects upward into the ring of the first vertebrae is the	odontoid process
The three recognizable parts of the sternum are the manubrium, the body, and the	xiphoid process
The true ribs are attached directly to the sternum by the	hyaline costal cartilages
The last two pairs of ribs do not attach to the sternum and are known as	floating ribs
The arms are connected to the rib cage by connecting bones organized as the	pectoral girdle

The acromion and coracoid processes are both parts of a bone called the	scapula
The anterior rod-shaped bones that helps connect the arm bones to the axial skeleton is the	clavicle
The socket found in teh scapula where the humerus articulates is called the	glenoid fossa
The area in the center of the humerus where the deltoid muscle attaches is called the	deltoid tuberosity
The coronoid fossa is a depression located between the epicondyles of the	humerus

The olcranon process is a feature of the	ulna
The hamate, capitate and trapezoid are different kinds of	carpals
The phalanges of the hand are the bones found in the	fingers
The three bones of the pelvis are the ilium, ischium, and the	pubis
Where the ilium joins the sacrum, the joint is known as the	sacroiliac joint

The largest and strongest bone of the human body is the	femur
The large opening in the pelvic bone is referred to as the	obturator foramen
The proper name for the kneecap bone is the	patella
The thin leg bone extenfding down the lateral portion of the leg is the	fibula
The larger leg bone found on the medial side of the lower leg is the	tibia

The ankle of the lower leg is fromed by a series of tarsals that number	seven
The toe bones are known as	phalanges
The appendicular skeleton is composed of bones of the	upper and lower appendages
The cranium is composed of a series of bones	fused together at sutures
All the following are cranial bones except the	ethmoid bone

Both the foramen magnum and the obturator foramen are	large holes in bones
The cheekbone is formed by the processes of the	zygomatic and temporal bones
The saddle shaped depression in the sphenoid bone that contains the pituitary gland is the	sella turcica
Both the crista galli and cribiform plates are found in the	ethmoid bone
Both the maxillae and the palatine bones help to form the	hard palate

Scholiosis and kyphosis are conditions that result from	imporper curvature of the spine
The coccyx and the sacrum are names of	vertebrae
The atlas and axis are the names of	the first two vertebrae
The manubrium is the	upper bone of the sternum
The scapula is the bone of the pectoral girdle that contains the	acromion process and coracoid process

The glenoid fossa and acetabulum are both	sockets where large bones articulate
The clavicle is a rod-shaped bone of the	pectoral girdle
The deltoid muscle attaches to the humerus at the	deltoid tuberosity
All the fingers have three phalanges except the	thumb, which has 2
The area of the pelvis on which we sit is formed by	two ischia

The thin bone extending down the distal lateral portion of the leg	is the fibula
The instep of the foot is formed by	five metatarsels
The external auditory meatus is an opening in the temporal bone that leads to the inner part of the	ear
Many neck muscles attach to the temporal bones by means of the	mastoid process
The nasal cavity is divided into left and right chambers by a vertical partition called the	vomer bone

The triangular posterior bone of the pectoral girdle is called the	scapula
The socket in the pectoral girdle that receives the upper arm bone is the	glenoid fossa
The odontoid process of the _____ projects upward into the ring formed by the first vertebrae.	axis