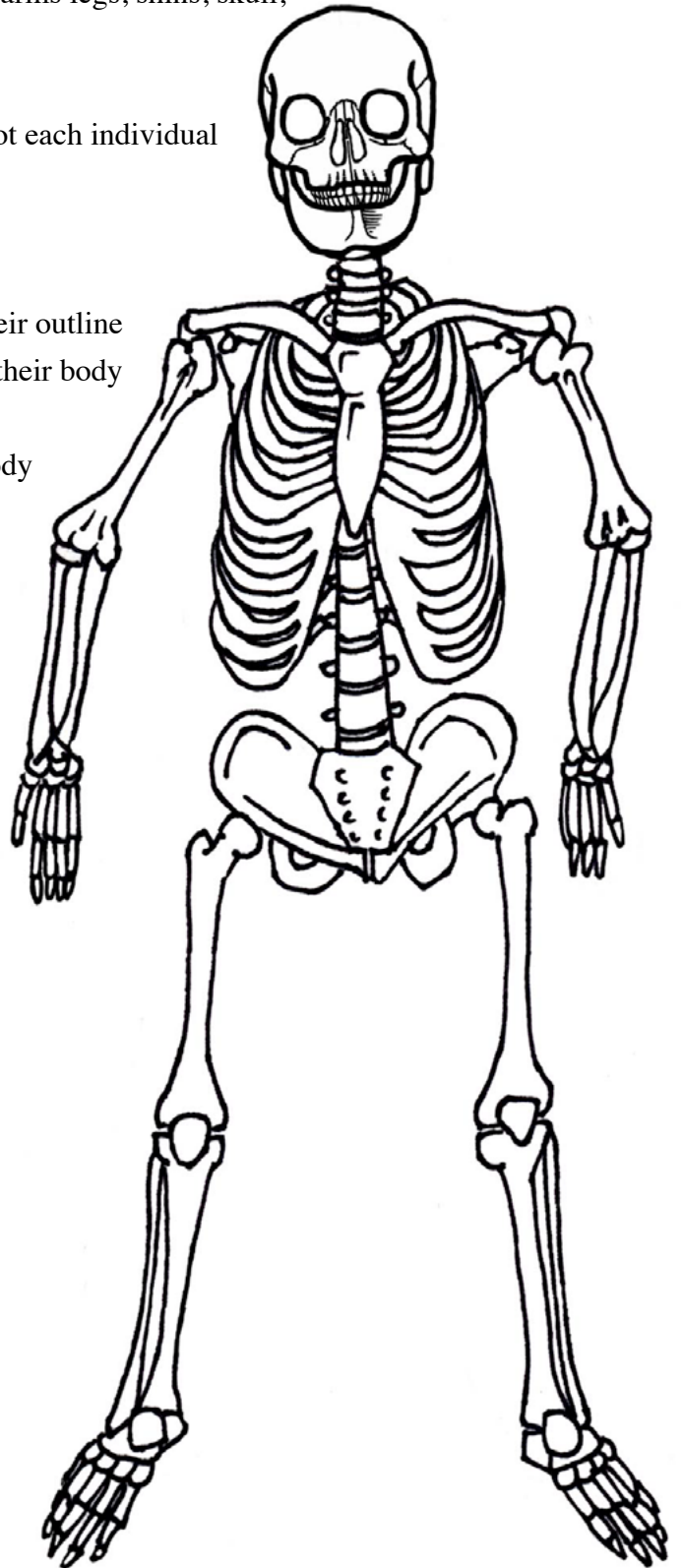


Model of the Human Skeleton

Have students read about the skeletal system below and take the two short answer quizzes. They can study the labeled skeleton and then try to label a whole skeleton themselves. Now they are ready to build their own labeled skeletons.

1. Print out the pdf bones of the body; hands, feet, arms, forearms legs, shins, skull, and ribcage.
2. Copy enough for each student to have a set.
3. Have them cut out each bone section, e.g a whole hand (not each individual bone).
4. Get a large roll of paper (3 foot wide).
5. Cut off lengths about the heights of your students.
6. Have each student lie down on a length paper and trace their outline with a permanent marker. Have them write their name on their body sheet.
7. Have them place their bones in the right places on their body outlines. Use glue sticks to secure organs in place.
8. Label their bones.



The Skeletal System - *The Bones and What They Do*

The Skeletal System: The skeleton forms the frame for the body and makes up about one fifth of the body's weight. It is made up of 206 bones. It also includes cartilage, joints, and ligaments. Besides for forming our body frame, the skeleton has several other jobs. It is the anchor and support for all our muscles and even our organs. It protects our vital organs like the brain, spinal cord, heart and lungs. It allows us to move with muscles attached by tendons, using the bones as levers. It is a place for our body to store fat and minerals, like calcium. It is where the body makes most of its new blood cells. Bones come in many shapes and sizes. The long bones have a long shaft and two bigger ends. These include the bones of the arms and legs. The largest bone in the body, the femur, is a long bone. It is 2 feet long and hollow, to make it lighter. It is very strong to support the body's weight. The short bones are cube-shaped and include the wrist – the carpals, and the bones of the ankle – the tarsals. The flat bones are thin, curved and flattened like the sternum and skull. Lastly, there are irregular bones such as the vertebra and pelvis. Each section of the skeleton has a job. Below see all the parts of the skeleton and how they work together to make the body a strong, moving machine.

The Skull: The skull surrounds and protects the brain and the organs of hearing and balance. The facial bones form the structure of the face, hold the eyes, and the organs for taste and smell and anchor the teeth. They have the openings for air and food. The whole skull anchors muscles that hold the head up, allow us to chew, and form facial expressions.

Arms and Hands: Each upper limb includes the humerus (arm), the radius and ulna (forearm) and the bones of the hand: 8 carpals (wrist), 5 metacarpals (palm) and 14 phalanges (fingers and thumb). The arm and forearm bend at the elbow in a hinge joint, which is not as flexible as the shoulder joint, but is much more stable. The hand with its many joints is made to be flexible and agile. It can grasp and lift a heavy suitcase or carefully pick up a pin. The upper limb is made to do both and everything in between.

The Pelvis: is formed by 2 hip bones attach to the sacrum of the backbone. On the outside of each side is a deep socket, called the acetabulum, where the head of the leg bones (the femur) sits. The pelvis supports and protects internal organs, attaches the lower limb to the body and with the lower limb supports the weight of the whole upper body. The hip joint is very important for leg movement and is supported by strong muscles and ligaments. Though it is a ball and socket joint like the shoulder, it is more stable and less moveable than that joint.

Legs and Feet: The lower limb includes the femur (thigh), tibia (shinbone) and fibula (leg), and bones of the foot: 7 tarsals (ankle), 5 metatarsals (foot) and 14 phalanges (toes). The kneecap (patella) sits in front of the knee joint, inside a muscle tendon. The femur is the largest bone in the body and makes up about one fourth of a person's height. It forms a ball and socket joint at the hip, with the pelvis, and a hinge joint at the knee, with the tibia. The knee, a hinge joint, has less flexibility than the hip but is more stable, because the knee carries the bulk of the body's weight. It is often injured. The entire weight of the body sits on the foot. The foot acts as a lever to move the body forward when we walk or run.

The Skeletal System - *The Bones and What They Do*

Short Answer Quiz

The skeleton forms the frame for the body and makes up about one fifth of the body's weight. It is made up of _____ (#) bones. It also includes cartilage, joints, and ligaments. Besides for forming our body frame, the skeleton has several other jobs. It is the anchor and support for all our _____ and even our organs. It protects our vital organs like the brain, spinal cord, heart and lungs. It allows us to move with muscles attached by _____, using the bones as levers. It is a place for our body to store fat and minerals, like _____. It is where the body makes most of its new _____ cells. Bones come in many shapes and sizes. The long bones have a long shaft and two bigger ends. These include the bones of the arms and legs. The largest bone in the body, the _____, is a long bone. It is 2 feet long and hollow, to make it lighter. It is very strong to support the body's weight. The short bones are cube-shaped and include the bones of the wrist – the carpals, and the bones of the ankle – the _____. The flat bones are thin, curved and flattened like the _____ and skull. Lastly, there are irregular bones such as the vertebra and pelvis. Each section of the skeleton has a job. They work together to make the body a strong, moving machine.

Choose from these vocabulary words (except for the number of bones):

blood
calcium
femur
muscles
sternum
tarsals
tendons

The Bones of Skeletal System - Short Answer Quiz

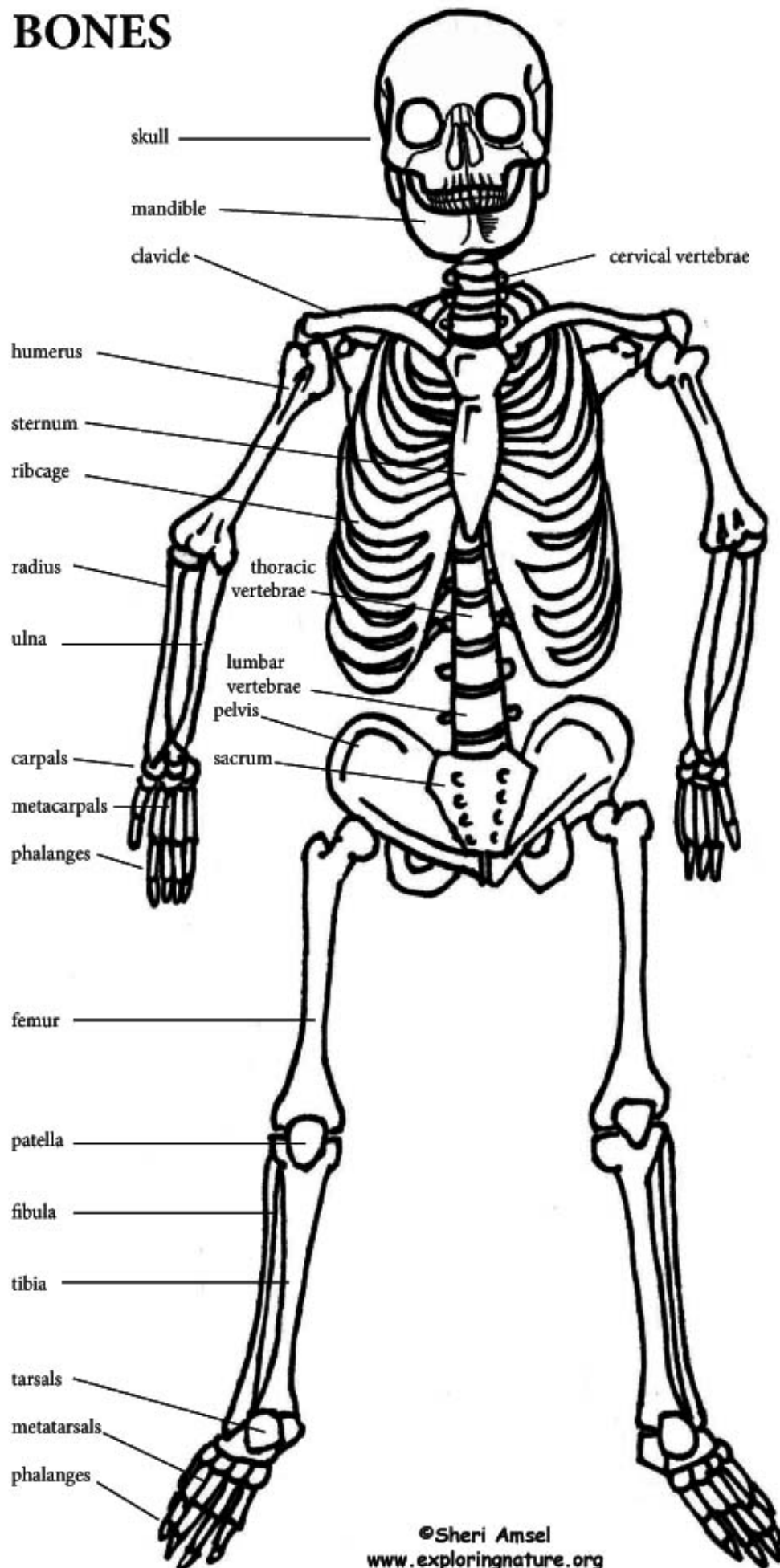
The **skull** surrounds and protects the _____ and the organs of hearing and balance. The facial bones form the structure of the face, hold the eyes, and the organs for taste and smell and anchor the _____. They have the openings for air and food. The whole skull anchors muscles that hold the head up, allow us to chew, and form facial expressions.

Each **upper limb** includes the humerus (arm), the radius and _____ (forearm) and the bones of the hand: 8 carpals (wrist), 5 metacarpals (palm) and 14 phalanges (fingers and thumb). The arm and forearm bend at the elbow in a _____ joint, which is not as flexible as the shoulder joint, but is much more stable. The hand with its many joints is made to be flexible and agile. It can grasp and lift a heavy suitcase or carefully pick up a pin. The upper limb is made to do both and everything in between.

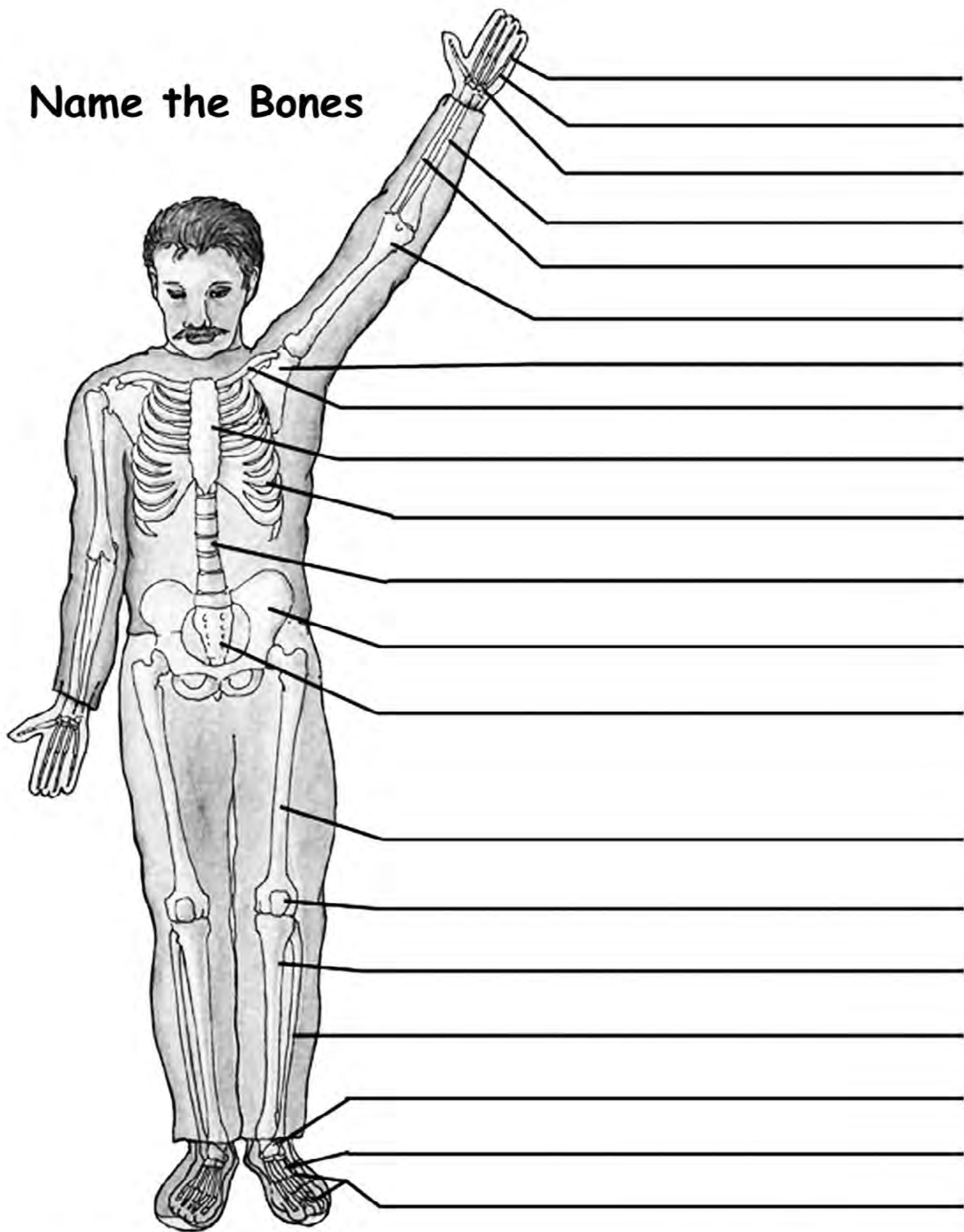
The **pelvis** is formed by 2 hip bones that attach to the _____ of the backbone. On the outside of each side is a deep socket, called the _____, where the head of the leg bones (the femur) sits. The pelvis supports and protects internal organs, attaches the lower limb to the body and with the lower limb supports the weight of the whole upper body. The hip joint is very important for leg movement and is supported by strong muscles and _____. . Though it is a ball and socket joint like the shoulder, it is more stable and less moveable than that joint.

The **lower limb** includes the femur (thigh), tibia (shinbone) and fibula (leg), and bones of the foot: 7 tarsals (ankle), 5 _____ (foot) and 14 phalanges (toes). The kneecap (_____) sits in front of the knee joint, inside a muscle tendon. The femur is the largest bone in the body and makes up about one fourth of a person's height. It forms a ball and socket joint at the hip, with the pelvis, and a hinge joint at the knee, with the tibia. The knee, a hinge joint, has less flexibility than the hip but is more stable, because the knee carries the bulk of the body's weight. It is often injured. The entire weight of the body sits on the foot. The foot acts as a lever to move the body forward when we walk or run. **Choose from these vocabulary words: acetabulum, brain, hinge, ligaments, metatarsals, patella, sacrum, teeth, ulna**

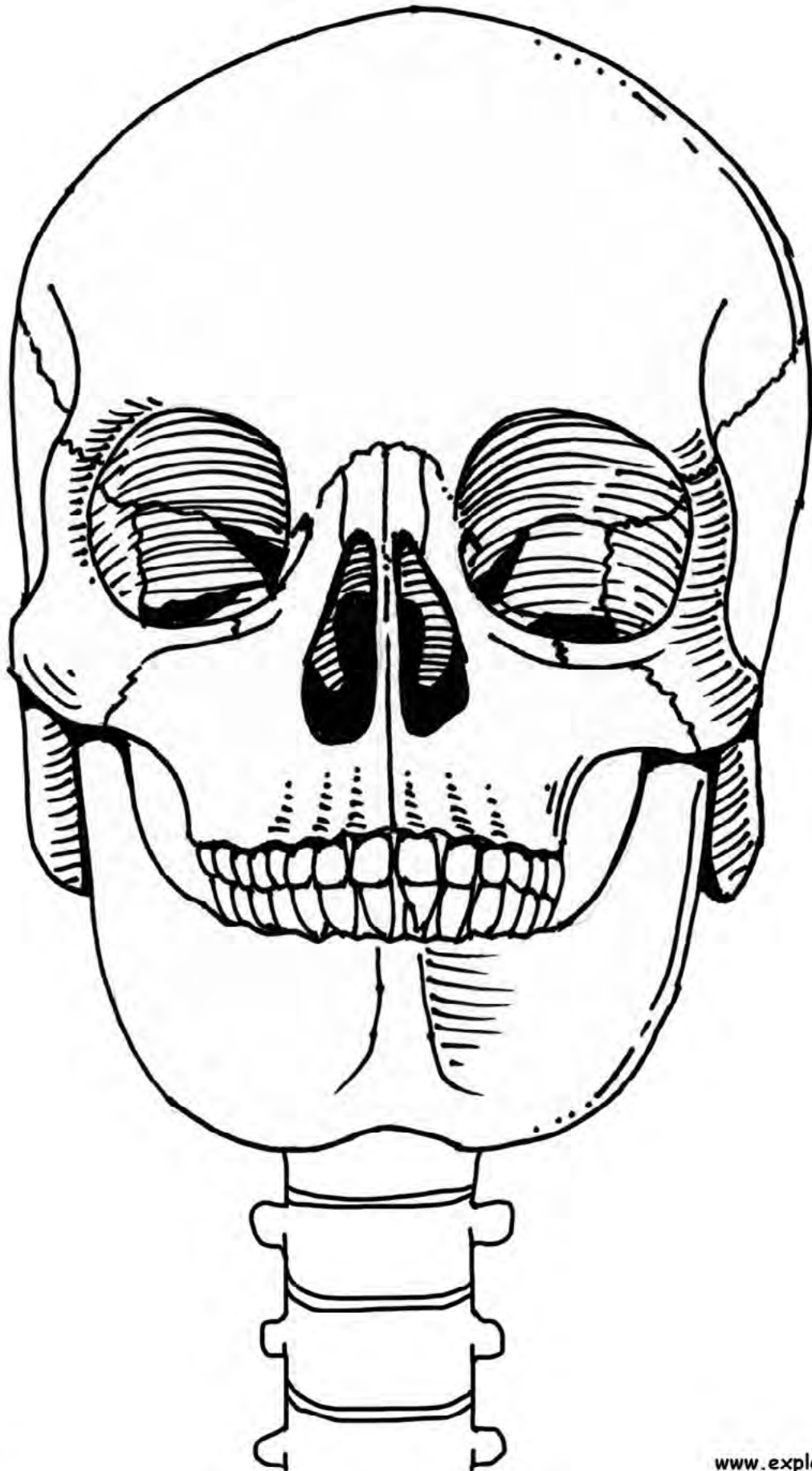
BONES



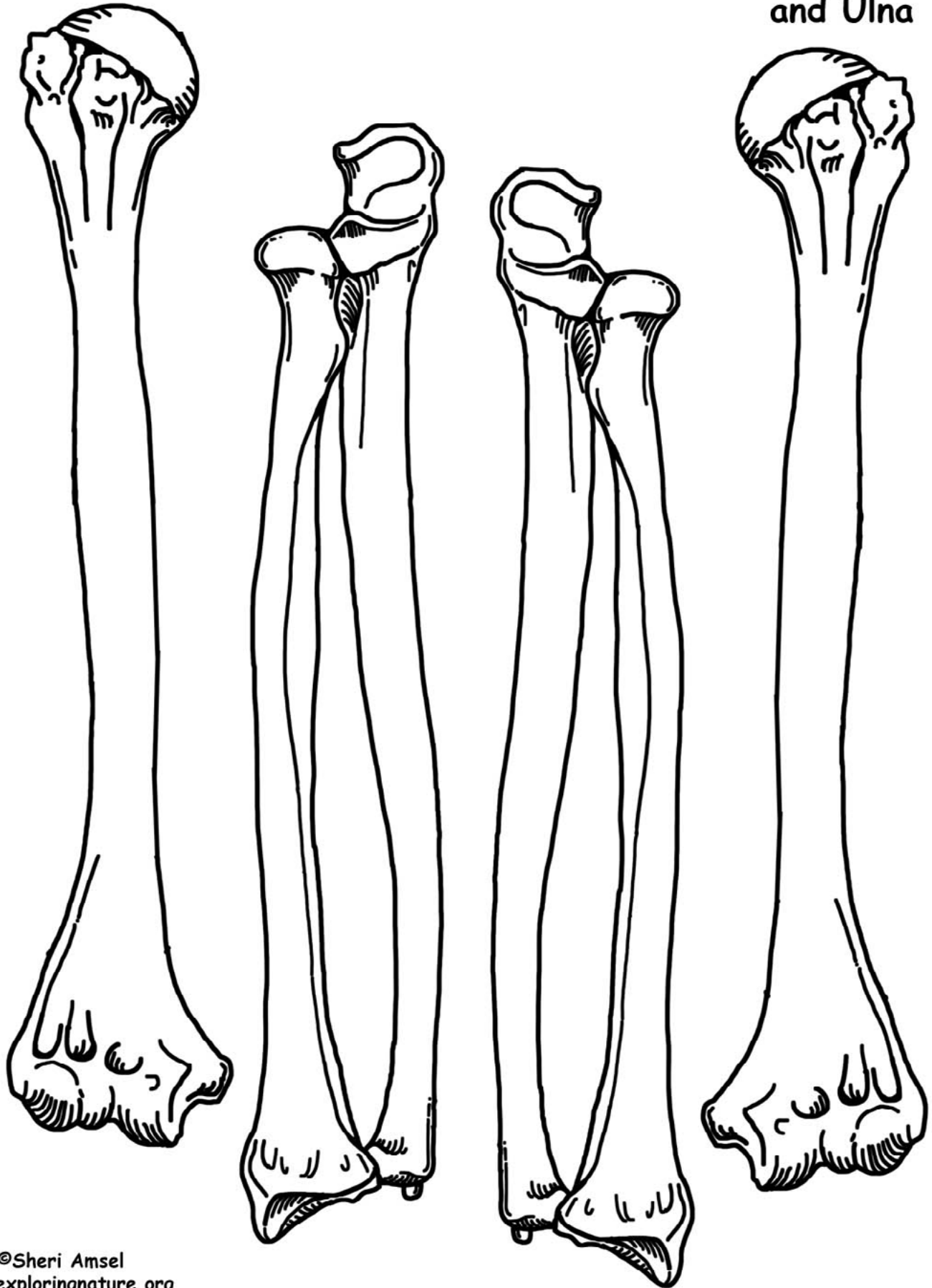
Name the Bones

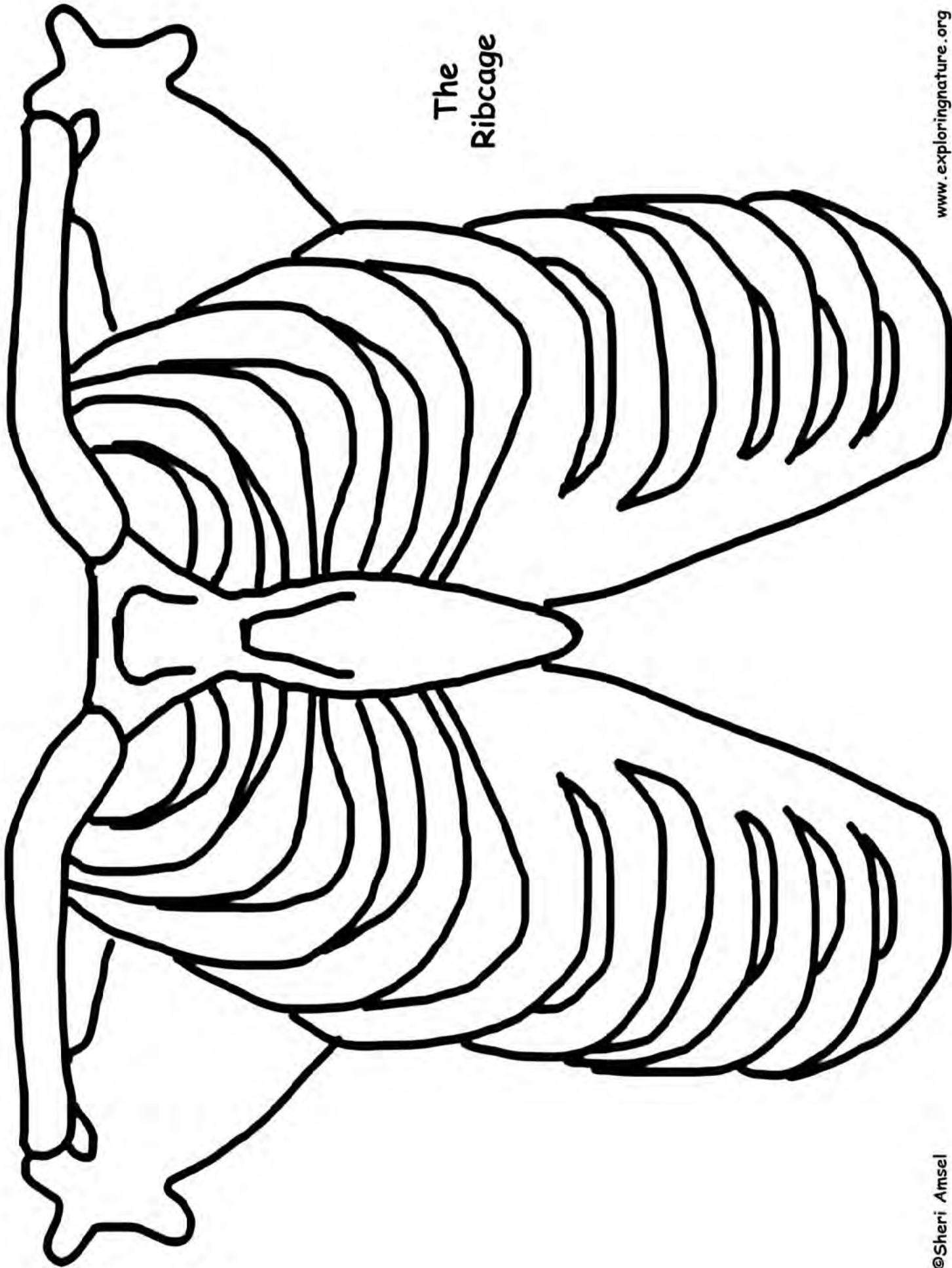


The Skull



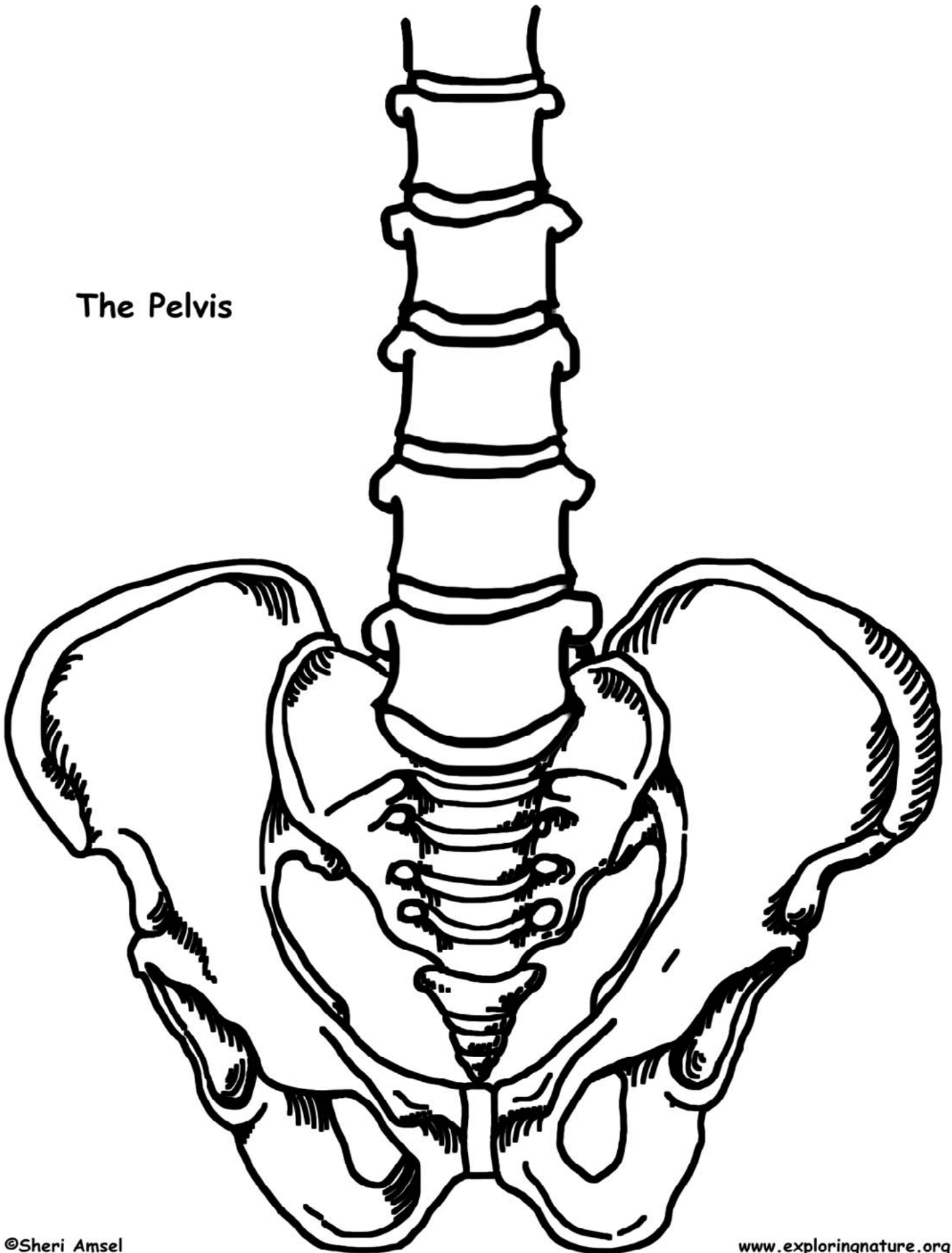
Arm Bones:
Humerus, Radius
and Ulna



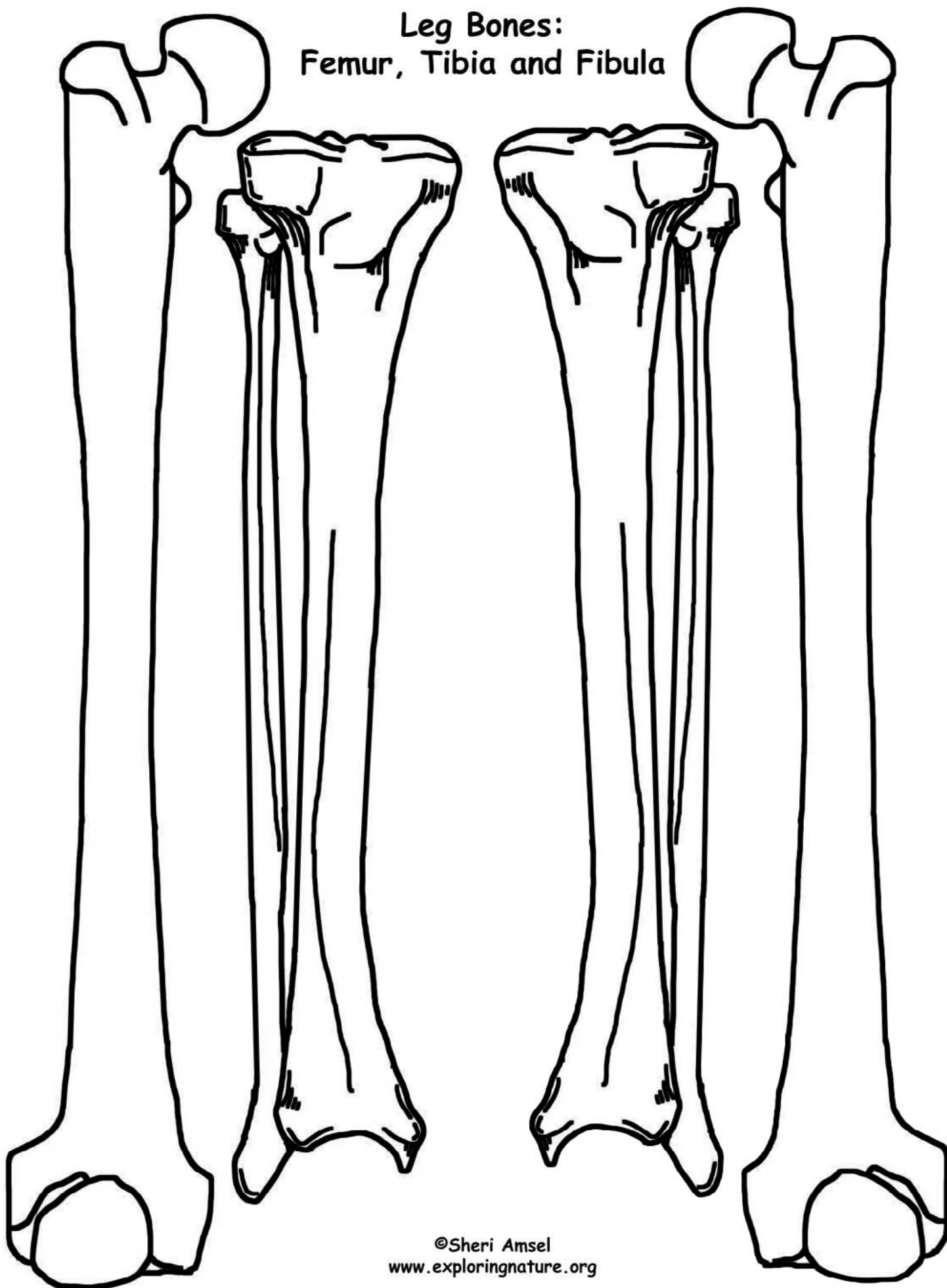


The
Ribcage

The Pelvis



Leg Bones:
Femur, Tibia and Fibula



The Hands and Feet

