

## The Thigh Bone's Connected to the ...

You have learned that the skeletal system has three major jobs and two minor jobs. There are also four basic parts to the skeletal system: the bones, the cartilage, the ligaments, and the joints. You need to understand what these parts are and how they help the system do its jobs.

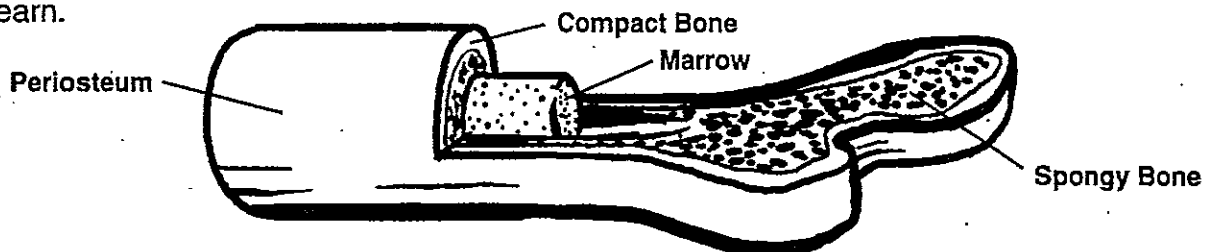
First, let's study the **bones**. Just what is a bone? What are they made of? Bones are a combination of minerals, protein, water, and living matter. Two of the minerals found in bone are **calcium** and **phosphorus**. These minerals give the bones their strength and hardness. The **protein** found in bones gives them their flexibility. The living cells in the bones need some way to get food, so your bones have a blood supply as well.

Adults have about 206 bones in their bodies. All of the bones have names. Many of them have both common names and scientific names. Later, you will have a chance to learn some of the scientific names and match them to the common names.

Since you know what is in bones, you might want to know how bones are put together. Beginning at the outside of the bone, there is a protective layer or membrane called the **periosteum**. This is where the muscles are able to attach to the bones. Many bones are made of **compact bone**. This kind of tissue is very dense. It looks smooth and solid, but it is actually full of tiny tunnels called **Haversian canals**. The nerves and blood vessels that help keep the bone alive are found inside the Haversian canals. Another kind of bone tissue is called **cancellous**, or spongy bone. This is softer than the dense, compact bone. It also has nerves and blood vessels in it. Lymph tissue is found in spongy bone as well. Finally, in the center of bones there may be **bone marrow**. There are two different kinds of bone marrow. **Red bone marrow** is found in flat bones and in the ends of long bones. It is where red blood cells, white blood cells, and blood platelets are made. **Yellow bone marrow** can be found in the center of long bones and is where fat cells are stored.

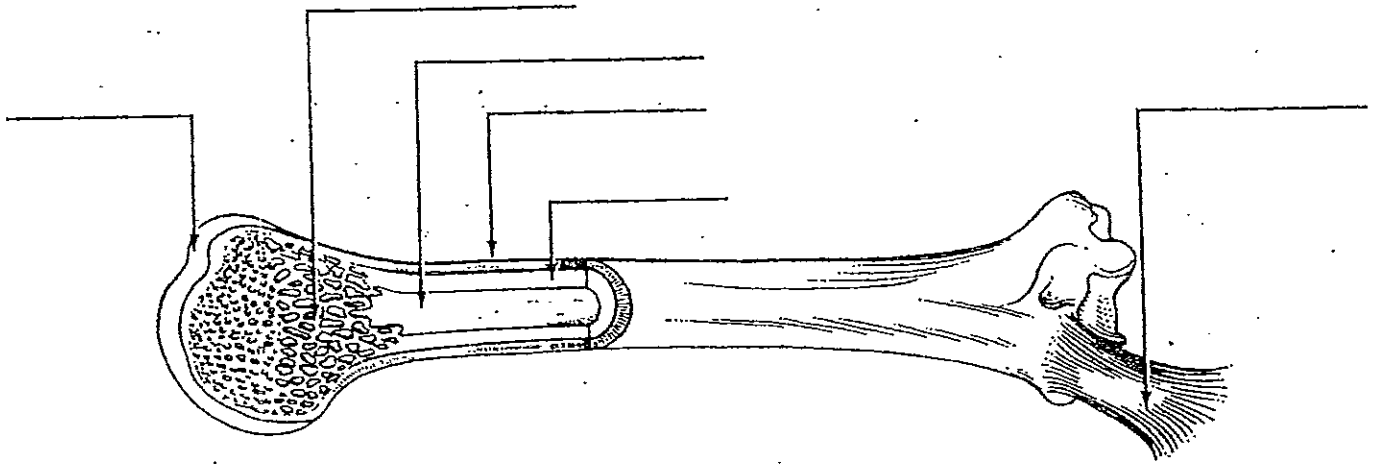
Finally, bones are classified into four groups according to their shapes and functions. Flat **bones** are for protection and support. The ribs and shoulder blades are examples of flat bones. The breastbone is also classified as a flat bone. Your skeleton also has **long bones**. These bones are primarily used to support weight. Examples include your legs, arms, and your fingers. The third kind of bone is known as **short bone**. These bones are used to support weight and to allow small movements. The bones found in your ankles and wrists are short bones. Finally, there are **irregular bones** in your skeleton. The vertebrae, or backbones, are irregular bones. You also have three tiny bones in your ears that are classified as irregular bones.

Let's review what we have discussed about bones. They are made of minerals, protein, water, and living cells. There are 206 of them in the adult skeleton. Bones consist of marrow, spongy bone, compact bone, and the periosteum. Bones may be flat, long, short, or irregular in shape. WOW! No bones about it, that's a lot of new information to learn.



## BONE AND SKELETON

Label the diagram of a bone. Use these terms: Marrow, Compact bone, Cartilage, Periosteum, Spongy bone, Ligament.



Bone Part	Function
Cartilage	
Spongy bone	
Compact bone	
Marrow Red Yellow	
Periosteum	
Ligament	

Bone Shapes	Function
1 -	
2 -	
3 -	
4 -	