SECTION 33.1 SKELETAL SYSTEM

Reinforcement

KEY CONCEPT The skeletal system includes bones and tissues that are important for supporting, protecting, and moving your body.

The **skeletal system** is an organ system that includes your bones and the tissues that connect your bones together.

- The **appendicular skeleton** is the collection of bones that are found in your legs and arms. These bones are the ones that allow you to move.
- The collection of bones that supports your body weight and protects your internal organs is called your **axial skeleton**. This includes your skull, rib cage, and the **vertebrae** of your spinal column.

The place where two bones connect is called a **joint**. Joints that allow for some movement have **cartilage**, a tough tissue, between the bones. Cartilage allows bones to move over one another without wearing down their ends. Joints that have limited movement, such as those found in the spine and the rib cage, are bound tightly by cartilage. Joints that have a wide range of motion, such as those in the knee and elbow, are connected by long bands of tissue called **ligaments**.

Bones, themselves, are living tissue. The outermost layer, compact bone, is very dense and has cells and blood vessels found embedded in it. Underneath the compact bone is spongy bone. Spongy bone is porous, and it contains bone marrow, which will either store fat or produce red blood cells.

As people grow, so do their bones. **Calcification** is the process by which specialized bones cells make hard compact bone.

The cells found within bone also play an important part in maintaining calcium homeostasis in the body. For example, if the bloodstream is low on calcium, cells in the bones remove calcium from the bones and make it available to the rest of the body. If there is extra calcium in the blood, bone cells add some calcium to the bones. The more calcium in the bones, the stronger they are.

1. What are the roles of the appendicular skeleton and the axial skeleton?

2. What are the two layers in bone?

3. How do bone cells affect the amount of calcium found in the bloodstream?