

**Summary Description**

This is the first in a series of 8 lessons that introduces the student to human anatomy.

**Learning Objectives**

To have the student learn a few key facts about the skeletal system.

**Approximate Time for Lesson**

50 minutes

**Suggested Maturity Level for Instruction**

Student should be able to read simple words and perform simple addition and subtraction. Also, student should be able to sit still and engage in one-on-one conversation.

**References:**

Skeletal System, Discovery Kids - <http://yucky.discovery.com/noflash/body/pg000124.html>

Skeleton, Yahoo Education - [http://education.yahoo.com/reference/encyclopedia/entry/skeleton-body;\\_ylt=Alt8AWHuj00xkMfQlMiLotpVt8wF](http://education.yahoo.com/reference/encyclopedia/entry/skeleton-body;_ylt=Alt8AWHuj00xkMfQlMiLotpVt8wF)

The Skeletal System, Minnesota State University, Mankato-

<http://www.mnsu.edu/emuseum/biology/humananatomy/skeletal/skeletalsystem.html>

**Materials Needed**

1. Internet Access - Pull up the following:
  - a. Picture of a skeleton (go to <http://www.teachpe.com/images/anatomy/skeleton.jpg>)
  - b. Picture of bone marrow (go to <http://media.photobucket.com/image/marrow/burumun/LA/ChurchState/marrow.jpg>)
  - c. Picture of a ligament (go to [http://www.methodisthealth.com/images/greystone/ei\\_0277.gif](http://www.methodisthealth.com/images/greystone/ei_0277.gif))
  - d. Picture of a muscle (go to [http://www.eorthopod.com/images/ContentImages/elbow/elbow\\_medial\\_epicondylitis/elbow\\_medepi\\_anatomy01.jpg](http://www.eorthopod.com/images/ContentImages/elbow/elbow_medial_epicondylitis/elbow_medepi_anatomy01.jpg))
2. Video of skeletal system (go to <http://www.youtube.com/watch?v=Pfo75XUnRIU>)

**Preparation**

Make sure you have materials open, printed and/or available prior to beginning the lesson.

**Script**

*Introduction (5 minutes)*

1. Teacher: Alright. Now that we've learned about some of the living things in our world, we will now learn more about just one living thing - ourselves! You probably know this already, but we are all people. And in science, people are called humans. And the study of the human body is called human anatomy. Anatomy is a fancy word for study of any living body. Can you say "human anatomy"? [Have the Student repeat the word "human anatomy" several times]
2. Teacher: Great, so are you ready to learn about human anatomy? [Get positive response from Student and begin lesson]

Lesson (40 minutes)

1. Teacher: Good, now, the first thing we're going to learn about is bones. You know, the same bones that a skeleton is made of. The entire collection of bones in our body is called the skeletal system. Here's a picture of the human skeleton (don't worry about all the names of the bones, we'll learn them later) [Show the Student the picture of the skeleton]
2. Teacher: So, can you name some bones in your body? [Engage the Student in conversation]
3. Teacher: Good. Now, why do you think we have bones? What do you think bones are for? [Engage the Student in conversation]
4. Teacher: Great answers. We actually need bones for many reasons. First, bones give our body shape. If you didn't have bones, you would look like a beach towel on the floor - all crumple with no shape. Second, bones protect our body. If you hit your head on something, what do you think protects your brain from getting hurt? The bone in your head, called the skull. [Point to the skull in the picture of the skeleton] Also, if you fall on the ground, what do you think protects your heart and lungs from getting hurt? The bones in your chest, called ribs. [Point to the ribs in the picture of the skeleton]
5. Teacher: Another reason we have bones is to make blood in the form of red and white blood cells. At the very center of most of your bones, there's a brown spongy thing called marrow that makes blood. Here's a picture of bone marrow. The brown stuff at the center of the bone is the marrow [Show the Student the picture of bone marrow]
6. Teacher: Red blood cells carry the air we breathe throughout our entire body - without red blood cells, the air we breathe would never reach all the parts of our body. White blood cells help fight any bad bacteria (remember our lesson on microbes?) that cause us to get sick. Without white blood cells, we will get sick easily and eventually die. So, do you think bones are important to us? [Get positive response from Student and move on]
7. Teacher: That's right. Bones are very important to us. Now, just like anything else that is living (yes, bones are living things as long as you are alive), bones wear out. Luckily for us, bones replace themselves so that our skeletons can last us our entire lives.

8. Teacher: For grown-up women, bones are especially important because they are a place to store something called calcium, which is needed to make a baby. So you see, we really can't live or even have children without our bones.
9. Teacher: Now, how many bones do you think we have in our body? I'll give you a hint, in just one of your hands, you have 27 bones. And in your face you have 14! [[Engage the Student in conversation](#)]
10. Teacher: That's a good guess. The correct answer is really kind of tricky. You were born with over 300 bones. But as you become a grown-up, some of your bones stick together to eventually become 206 bones. So a grown-up has 206 bones.
11. Teacher: OK. So I taught you some stuff about bones. But do you know what connects the bones together? For example, bend your elbow. That elbow connects two bones - one in your forearm and another in your upper arm. What do you think connects those bones together? [[Engage the Student in conversation](#)]
12. Teacher: Actually, ligaments are what connect bones together. Here's a picture of some ligaments connecting the knee. In the picture, the ligaments are the white stringy fibers. [[Show the Student the picture of ligaments](#)]
13. Teacher: So, we have ligaments everywhere in our bodies where two or more bones are connected. And any point where the bones are connected is called a joint. The point where you can bend your elbow is called a joint. The place where you can bend your knees is called your knee joint. Can you name other joints in your body? [[Engage the Student in conversation](#)]
14. Teacher: Good. Ok, now that we learned what connects bones together and know that the connections of two or more bones are called joints; do you know what makes bone move? [[Engage the Student in conversation](#)]
15. Teacher: Your muscles are what make bones move. Just like ligaments, muscles are also connected to our bones. But muscles make our bones move while ligaments connect our bones together. Here's a picture of arm muscles connected to our forearm bone. The muscles are the red stringy things. [[Show the Student the picture of muscles](#)]
16. Teacher: Now, see the white stuff between the muscle and the bone? It looks like a ligament, right? But actually, it's called a tendon. A tendon is something that connects muscle to bones.
17. Teacher: Now for a trick question. Try to wiggle your nose and ears with your fingers. You'll notice that they're both harder than skin but softer than your bones. Instead, they are almost rubbery. Well, the stuff that your nose and ears are made of is called "cartilage". Can you say cartilage? [[Have the Student repeat the word "cartilage" several times](#)]

18. Teacher: Good. Although it's not part of the skeletal system, I didn't want you to get confused about what your nose or ears are made of...because certainly they are not made of bone.
19. Teacher: OK - enough learning about new words. Before we end this lesson, let's watch this funny video about the names of the bones of your skeletal system. [[Click on the video about the skeletal system](#)]
20. Teacher: Great job! Time for review, go stand up and get in front of the class (consider inviting other members of the family also to set the stage). [[Ask Student the following](#):
  - a. What are bones for? Any one of the following: 1) to give us structure, 2) protection, 3) produces blood (red and white blood cells), 4) replaces old bones, and 5) stores calcium.
  - b. What are the things called that connects two bones together? Ligaments
  - c. What is the point where two bones connect called? Joints
  - d. What makes our bones move? Muscles
  - e. What connects muscles to bones? Tendons

Teacher reviews any questions that the Student missed].

Wrap Up (5 minutes)

Teacher: [[Clapping](#)] You did GREAT! Wonderful job! Are there any questions that you have regarding our skeletal system? [[Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet](#)]