

### Lesson 3.5: The Skeletal System

<b>Task</b>	<b>Page(s)</b>	<b>Learning Target</b>
<b>1</b>	<b>2</b>	I can identify structures and explain functions of the skeletal system.
<b>2</b>	<b>3</b>	I can make a model to show how joints affect movement.
<b>3</b>	<b>4</b>	I can plan a model for bone using household materials.
<b>4</b>	<b>5</b>	I can create a graph that presents bones of the axial and appendicular skeletons.

**Task 1 Learning Target:** I can identify structures and explain functions of the skeletal system.

**1. Bone Layer Structures**

A. Bone is made of layers of living tissue

\*\*Draw and label a bone that shows layers

\*\*Copy and complete the following table using the word section below.

(Outer Most) ↓	<b>Parts Of Bone</b>		(Inner Most) ↓

Compact Bone provides strength that is heavy cells packed tightly together porous; small spaces thin membrane cover w/ nerves & blood vessels

Spongy Bone provides strength that is light weight detect pain and provides nutrients produces blood cells & stores fat

Periosteum soft jelly-like tissue

Marrow

B. Joints: place where 2 \_\_\_\_\_  
 -held in place by a tough band of tissue called \_\_\_\_\_  
 a. Moveable Joint:  
 b. Immovable Joint:

C. Cartilage is a strong rubbery tissue @ end of bones  
 -acts as a \_\_\_\_\_ absorber  
 -reduces \_\_\_\_\_ that would be caused by bones rubbing together

**2. Functions**

A. Shape and \_\_\_\_\_  
 B. \_\_\_\_\_ internal organs  
 C. Locomotion: bones \_\_\_\_\_ (help from \_\_\_\_\_ muscles)  
 D. Blood cells formed in the \_\_\_\_\_  
 E. \_\_\_\_\_ and phosphorous are stored = strength

**3. Bone Formation**

A. at birth, bones are mostly \_\_\_\_\_  
 B. gradually, most cartilage is replaced with \_\_\_\_\_  
 C. \_\_\_\_\_: cells that build bone - deposits \_\_\_\_\_ and phosphorous

**4. Diseases and Conditions of the Skeletal System**

A. Osteoporosis:  
 B. Arthritis:

**Resource Link:** <http://www.tenalpscommunicate.com/clients/siemens/humanbodyOnline/#home>

**Task 2 Learning Target:** I can make a model to show how joints affect movement.

Option 1:	Option 2:
<p><b>Gather the Materials:</b></p> <p>1 straw 1 pipe cleaner</p> <p><b>Follow the Procedure:</b></p> <ol style="list-style-type: none"><li>1. Thread the pipe cleaner through the straw. Then gently try to bend the pipe cleaner where it is covered in the straw.<ol style="list-style-type: none"><li>a. <b>Summarize your model by drawing and writing a text description.</b></li></ol></li><li>2. Take the pipe cleaner out of the straw and cut the straw into pieces that are about one inch long. Thread the pieces of the straw onto the pipe cleaner so that they are touching each other.</li><li>3. Now gently bend the pipe cleaner again.<ol style="list-style-type: none"><li>b. <b>Summarize your model by drawing and writing a text description of your model.</b></li></ol></li></ol>	<p><b>Gather the Materials:</b></p> <p>Scissors 1 piece of thick paper 5 straws 5 pieces of string Tape</p> <ol style="list-style-type: none"><li>1. Watch the following video: <a href="https://youtu.be/rIv-C74VgkQ">https://youtu.be/rIv-C74VgkQ</a></li><li>2. Make a model of the hand using the materials provided.</li></ol> <p><b>Summarize your model by drawing and writing a text description.</b></p> <p><b>Need help making your model:</b></p> <ol style="list-style-type: none"><li>a. Use the thick piece of paper to trace and cut a template for your hand. Outline the joints.</li><li>b. Use the straws to represent the fingers. You will have to cut the straws into pieces as shown in the video. **Notice that some “fingers” have 4 straw pieces and one has 3 straw pieces.</li><li>c. Tape the straw pieces to the paper.</li><li>d. Thread the strings through the straws and make ties on each end.</li></ol>

**Task 3 Learning Target:** I can plan a model for bone using household materials.

<u>Material</u>	<u>How does it represent structure?</u>	<u>How does it represent function?</u>

**Task 4 Learning Target:** I can create a graph that presents bones of the axial and appendicular skeletons.

The skeletal system has two distinctive parts: the axial skeleton and the appendicular skeleton.

The axial skeleton, with a total of 80 bones, consists of the vertebral column (spine), the rib cage and the skull. The axial skeleton is mainly responsible for protection. The vertebral column protects the spinal cord; the rib cage protects the heart and lungs; the skull protects the brain.

The appendicular skeleton has a total of 126 bones and is formed mainly by the upper and lower limbs. The appendicular skeleton's primary responsibility is to allow for locomotion.

Create a graph that shows how an adult's bones are distributed: 29 skull bones, 26 vertebrae,   ? ribs, four shoulder bones, 60 arm and hand bones, two hip bones, and   ? leg and feet bones.