



## ***Passports: Adventures in Learning The Human Body Series: Skeletal and Muscular Systems Curriculum Guide grades K-3***

### **Lesson Outcomes:**

The student will be introduced to the following concepts:

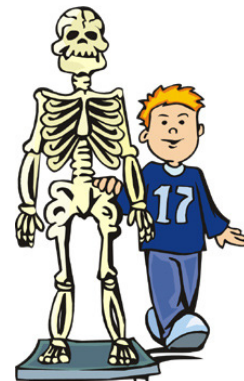
- The function of the skeletal system
- The function of the muscular system
- Activities and resources for teachers and students on the muscular and skeletal systems

### **Challenge Questions:**

- 1. What does the skeletal system, or our bones do for us?*
- 2. What do our muscles do?*
- 3. How do our bones and muscles work together?*

### **Responses:**

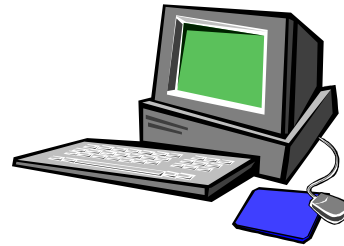
1. Gives the body structure and support, protects vital organs
2. Allows the body to move.
3. Muscles are attached to bones, they contract to pull the bones together, and this causes the body to move.



### **Vocabulary Words:**

- Skeleton: All of the bones in the body
- Joint: Area where two bones meet
- Muscle – tissue that causes movement

### **Web Resources:**



<http://www.kidport.com/Grade5/Science/BodyMuscles.htm>

Information and virtual activities about the muscular system

<http://yucky.kids.discovery.com/flash/body/pg000123.html>

Fun information and facts about muscles for elementary students

<http://www.stemnet.nf.ca/CITE/muscular.htm>

Information and activities on the human body systems for elementary students

<http://www.about-humanskeleton.info/>

Information on the skeletal system for elementary students

<http://www.newtonsapple.tv/>

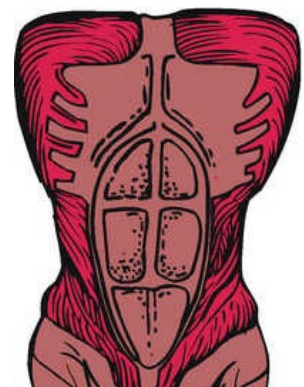
This page from Newton's Apple explains how bones get strong, how the human body and a house are alike, and what our skeletal system does. Student activities are included.

### **Suggested Reading:**

The Internal Adventures of Marcus Snarkis: Ray Nelson, Jr., Douglas Kelly, Ben Adams, Julie Hansen

The Incredible Human Body: Esther Weiner

The Human Body (Scienceworks for kids): Elissa Dosik Weinroth, Alexander Cruz, Jo Larsen, and Nancy Schoefl



### Writing Prompts/Discussion Questions:

- The skull is important because...
- My muscles help me...
- Why do skeletons seem scary?
- Muscles can't work without bones because...



## Activity 1: Make Your Own Skeleton with paper

Scary. Creepy. Weird. Cool. That's what you may say about skeletons on Halloween. Now you can easily make one in your classroom. Close your eyes and think of yourself as a skeleton. Imagine all your bones from the top of your head down to your toes. Did you know that when fully grown, you will have 206 bones in your body?

### Materials

- poster board
- brads, medium and small
- glue
- scissors
- tape measures
- metric conversion charts
- anatomy book illustration of skeletal system
- chalkboard and chalk
- string

1. Make a list of all the bones that should be included in your skeleton. 2. Either working in a small group or individually, start drawing your bone pieces on your poster board. Then, cut out the pieces. Finally, connect the various bones using brads or glue. 4. When you have completed your skeleton, insert a string near the top of its head and hang your masterpiece in the classroom.

### Questions

1. What things did you notice about your skeleton that is different from the real you?
2. Which bones do you move the most often?
3. What did you notice about the bone sizes? Where are big bones? Little ones? Why?
4. What do the brad connectors and your joints have in common?

## Activity 2: Make Your Own Skeleton with noodles

### What you'll need:

Black construction paper (approximately 6" x 11.5")

Glue that will dry clear

### A combination of these or other similar items:

Lima beans (head, thorax, hips)

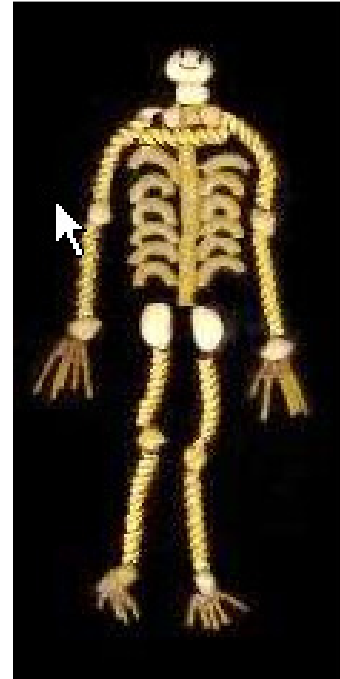
Short, small macaroni in a tube (spine)

Thin twisted macaroni (arms, legs)

Elbow noodles (ribs)

Small shells (joints)

Spaghetti (fingers, toes)



Using the noodles and beans of choice, put together a skeleton by placing the noodles in the appropriate places as bones. Once students have created their skeleton, they will glue the pieces on the construction paper and add any details. Encourage students to display major bones and joints.

## Activity 3: Muscles Contract

Tell students to hold their arms up like goal posts. Leave one arm up and place their fingers lightly on the other arm at the bicep area (between shoulder and elbow). Tell students to bring the hand of the lifted arm toward their shoulder (as if flexing, but they do not need to). Ask students if they can feel the movement under their skin. Explain that this is their bicep muscle.

Student can also see the muscles in their forearms by extending one arm with palm down and flexing their hand back. Students will be able to see the movement of their muscles, or feel it with their opposite hand. Ask student what part of the body they believe this muscle moves.

Answer: hands and fingers