

#8952

WHAT'S INSIDE YOUR BODY? BONES & MUSCLES/ NERVOUS SYSTEM

Grade Levels: 2-6

22 minutes

SVE & CHURCHILL MEDIA 1999

DESCRIPTION

Can you name your body's systems? What does skeleton mean? How many bones do you have? What are the five functions of your skeleton? What do muscles do? Do you know the three kinds of muscles? What controls your body's systems? What makes up the nervous system? Lori and her young friends explore three body systems and how they work together.

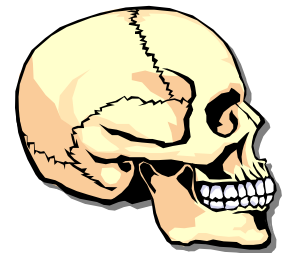
ACADEMIC STANDARDS

Subject Area: Life Sciences

- ◆ Standard: Understands the structure and function of cells and organisms
 - Benchmark: Knows that multicellular organisms have a variety of specialized cells, tissues, organs, and organ systems that perform specialized functions (e.g., digestion, respiration, reproduction, circulation, excretion, movement, control and coordination, protection from disease)

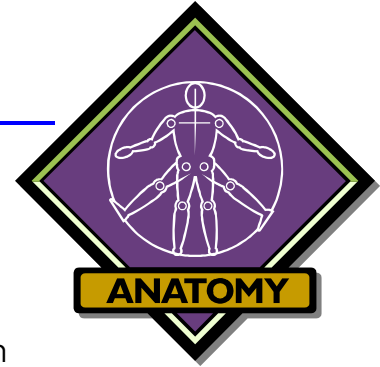
INSTRUCTIONAL GOALS

1. To explain the relationships between cells, tissue, organs, and organ systems in the functioning of the human body.
2. To name and describe the five main functions of the skeletal system and identify the different types of bones.
3. To describe the functions of the two divisions of the skeletal system.
4. To name the different types of joints and explain how they assist in movement.
5. To differentiate between the three types of muscles.
6. To describe the functions of the nervous system and understand that the brain and the spinal cord send messages to all parts of the body.
7. To identify the various parts of the brain and explain their main functions.
8. To distinguish between the central nervous system, the peripheral nervous system, and the autonomic nervous system.



VOCABULARY

1. appendicular skeleton
2. autonomic nervous system
3. axial skeleton
4. ball-and-socket joint
5. bone
6. brain
7. brain stem
8. cancellous cell
9. cardiac muscles
10. cartilage
11. cell
12. central nervous system
13. cerebellum
14. cerebrum
15. circulatory system
16. compact cell
17. conscious
18. cranium
19. digestive system
20. extensor
21. flexor
22. hinge joint
23. involuntary muscles
24. irregular bones
25. joint
26. ligament
27. marrow
28. microscopic
29. muscle
30. muscle fiber
31. muscular system
32. nerve endings
33. nervous system
34. organ
35. peripheral nervous system
36. respiratory system
37. skeletal muscle
38. skeletal system
39. skeleton
40. sliding joint
41. smooth muscles
42. spinal cord
43. spine
44. synovial fluid
45. system
46. tendon
47. tissue
48. vertebrae
49. voluntary muscles



BEFORE SHOWING

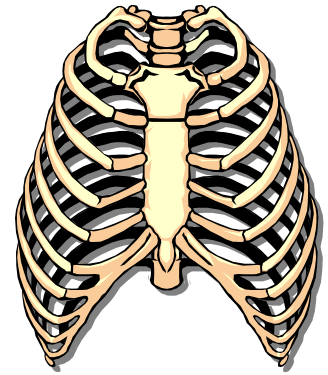
Explain to students that the following video will discuss the different parts of the human body, specifically the skeletal, muscular, and nervous systems. Do any students know how these systems work? What organs do they include? Conduct an informal discussion on the three systems. Encourage students to write down any questions they may think of during the program.

AFTER SHOWING

Discussion Items and Questions

1. What is the most basic unit of the body? How many cells are in the body? What do groups of cells that are similar form? What does a group of like tissue form? What does a group of organs create? What is a *system*? Do the systems work independently?
2. What are the five important functions of the skeletal system? What are the two types of cells that make up bones?

3. Tell students to hold one wrist with the other and move the wrist around. Have them move their arms and other parts of their body. Do they feel the bones underneath the skin and muscle?
4. What are the two divisions of the skeletal system? How many bones are in the axial skeleton? What is the *spine*? How many bones are in the appendicular skeleton?
5. How are the bones connected to each other? What are the three major kinds of joints? What are *hinge joints*? What are *sliding joints*? What are *ball-and-socket joints*? Have students flex their elbows. Can they go backwards? Have them bend over and feel the sliding vertebrae in their backs. Tell the students to move their shoulders around and around. How are each of these joints different?
6. What are *ligaments*? What is *cartilage*? What is *synovial fluid*?
7. What is the *muscular system*? What is a *muscle*? How are muscles attached to bone? What are the three types of muscles? Which of these muscles are voluntary? Which are involuntary?
8. How is the nervous system related to the skeletal and muscular systems? What is the *nervous system*? What are *nerve endings*? What are the two divisions of the nervous system?
9. What is the *central nervous system*? What is the *brain*? What are the different sections of the brain? What is the *cerebrum*? Which hemisphere has more control over which side of the body? What is the *cerebellum*? What is the *brain stem*? What is the *spinal cord*? What would happen if the spinal cord were cut? How is the spinal cord protected?
10. What is the *peripheral nervous system*? What is the *autonomic nervous system*?
11. Remind students of the part in the video when Lori scraped Jesse's foot with a pen. How did he react? Did he mean to curl his foot? Have students ever put their finger near a hot stove and their hand moved back very quickly? Or stepped on a sharp object and they jumped up without thinking?
12. Lori stressed how exercise was important for all the body's systems. What did she mean? How do students take care of their bodies? How do they maintain their muscular systems? Their skeletal systems? Their nervous systems?



SUMMARY

Join host Lori Laboratory and her two young lab assistants in their exploration of the body's main systems: the digestive, respiratory, circulatory, nervous, skeletal, and muscle systems.

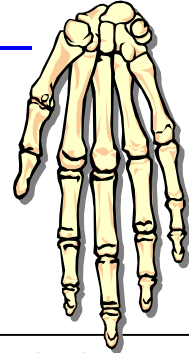
Lori and her assistants begin with the most basic unit of the body—the cell—and explain how systems are made up of groups of organs that work together. They then explore the different functions of the skeletal and muscle systems. The second segment of the video covers the nervous system and describes the workings of the brain.

RELATED RESOURCES



Captioned Media Program

- Muscular and Skeletal Systems #3272
- Skeleton: Our Fantastic Framework #2430



World Wide Web



The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and “kid-safe” sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- **YOUR GROSS AND COOL BODY**

<http://yucky.kids.discovery.com/noflash/body/pg000124.html>

“Without bones you’d be just a puddle of skin and guts on the floor.” So begins the explanation of the skeletal system. Type a body system in the search box you want to know, including the muscular, nervous, and other systems.

- **TOUR OF THE HUMAN BODY**

<http://tqjunior.thinkquest.org/5777/tour.htm>

From the ThinkQuest Junior site, explore the human body which includes the skeletal, muscular, and nervous systems.