

Grade Level: 6-8

Curriculum Focus: Human Biology

Lesson Duration: One or two class periods

Student Objectives

- Discuss the function of each system in the body.
- Consider how the systems work together.
- Apply their knowledge by writing a description.

Materials

- Video on *unitedstreaming: The Ultimate Guide: Human Body*
Search for this video by using the video title (or a portion of it) as the keyword.

Selected clips that support this lesson plan:

- Part One: The Ultimate Guide: Human Body
 - The Technology of the Human Body: Our Skeleton, Skin, and Hearing
- Part Two: The Ultimate Guide: Human Body
 - The Amazing Machine: Our Hands, Brain, Nose, Eyes, and Cells
- Paper and pencils
- Newsprint and markers
- Computer with Internet access

Procedures

1. Begin the lesson by asking students what they know about the human body. Ask them to consider the following questions. If students are unsure of the answers, tell them they will learn about them during this lesson.
 - How many systems are in the human body?
 - What does each system do?
 - Is there any connection among the systems in the body?
2. Show students the “Human Body Works” segment, which illustrates the skeletal system, the relationship between bones and soft organs, and the relationship between bones and muscles.

3. Briefly discuss the segment, highlighting connections among body systems. Point out that our muscles send signals to the brain, which then sends a message about how to move. The skeletal system protects key organs, the skull protects the brain, and the rib cage protects the heart.
4. Tell students that their task is to describe the connections among the body systems in several different situations, given below. They may work individually or in pairs. Share this hint: Consider the skeletal, muscular, nervous, circulatory, and respiratory systems.
 - What happens in the body when a teammate kicks the ball to you during a soccer game and you then kick it to make a goal? Think about how many body systems are involved.
 - What happens in the body when you come home from school, smell cookies baking, run to the kitchen to see if they're done, take one, and eat it? How many body systems are involved? What role does each play?
 - What happens in the body when you're studying for a math test—reading the problems, writing the answers, getting up to stretch, and talking to a friend on the phone? How are the body systems working together to complete these tasks?
 - What happens in the body when you're sleeping? Which systems are working?
5. Direct students to classroom print resources and the following Web sites:
 - http://www.stcms.si.edu/hbs/hbs_student.htm
 - <http://sln.fi.edu/biosci/systems/systems.html>
 - <http://www4.tpgi.com.au/users/amcgann/body/skeletal.html> (focus is the skeletal system)
 - <http://yucky.kids.discovery.com/noflash/body/pg000126.html> (focus is the digestive system)
 - <http://www.worldinvisible.com/apologet/humbody/body.htm>
 - <http://web.jjay.cuny.edu/~acarp/NSC/14-anatomy.htm>
6. Give students time in class to work on the activity. Make sure they write how the body systems are connected in each situation. Students may include drawings showing these connections.
7. If time permits, ask students to share their ideas. How many body systems are involved in most of the activities? What does that tell students about the human body?
8. Conclude the lesson by reviewing students' ideas at the beginning of the lesson. What have they learned about the relationships among different systems in the body?

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students participated actively in class discussions; demonstrated a solid understanding of how body systems work; clearly described how they are connected.
- **2 points:** Students participated in class discussions; demonstrated an understanding of how body systems work; described how they are connected.
- **1 point:** Students did not participate in class discussions; demonstrated no understanding of how of body systems work; did not describe how they are connected.



Vocabulary

circulatory system

Definition: The system of blood, blood vessels, lymph vessels, and heart concerned with the circulation of the blood and lymph

Context: The heart is central to the human circulatory system; it pushes blood through the body's network of arteries and veins.

muscular system

Definition: The 600 muscles in the body, both voluntary and involuntary

Context: The heart muscle is unique in the human muscular system because it is made of smooth and skeletal muscle and is involuntary.

nervous system

Definition: The brain, spinal cord, and network of nerves that receive messages from inside and outside the body and transmit instructions about how to respond

Context: The nervous system is the control center of the body; it interprets the senses and enables you to respond.

respiratory system

Definition: The system that allows breathing; includes the nose, pharynx, trachea, and lungs

Context: The function of the respiratory system is breathing in oxygen from the air and expelling carbon dioxide.

skeletal system

Definition: The bones (206 in an adult) that give the body support and protect vital organs

Context: Without a skeletal system, the human body would be limp and floppy.

Academic Standards

National Academy of Sciences

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K-12. To view the standards, visit <http://books.nap.edu>.

This lesson plan addresses the following science standards:

- Life Science: Interdependence of organisms; Behavior of organisms

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit <http://www.mcrel.org/>.

This lesson plan addresses the following national standards:

- Science – Life Sciences: Understands the structure and function of cells and organisms



- Language Arts – Viewing: Uses viewing skills and strategies to understand and interpret visual media; Reading: Uses reading skills and strategies to understand and interpret a variety of informational texts
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Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>

