



# Discussion Guide for

## THE HUMAN BODY: THE ULTIMATE MACHINE

### Objectives

After viewing this program, students will be, able to:

- List the ten major systems of the human body.
- Explain how the skin regulates body temperature and give reasons why this is vitally important.
- Define melanin.
- List the three types of muscles and discuss the differences between. each.
- Give several reasons why the skeletal system plays such an important role in the body.
- Differentiate between ligaments and cartilage. List several functions of bones.
- Define hemoglobin.
- Discuss each of the components that comprise blood.

### About This Program

This program is part of the AIMS Interactive Science Essentials Series. This twenty-four part series covers four subject areas- Earth Science, Biology, Physics, and Chemistry. There are six programs in each subject area. The individual programs are divided into randomly accessible sections. A glossary provides written definitions of terms used in the program, and in most cases will run a section of the video where the word is used in context.

A script of the narration is accessible, as well as a bulletin board containing a general introduction to the subject. A quiz allows the student to test their knowledge and the results are recorded for you. In the teacher's section you can view each student's test responses and edit or create your own quiz and test questions.

### Overview

The Human Body: The Ultimate Machine is part one of the Biology Essentials series which examines modern day biology. The program details the functioning of each of the human body's major systems including the muscular, circulatory, respiratory, digestive, skeletal, urinary, endocrine, lymphatic, nervous, and reproductive systems. Realistic 3-D animation, exciting footage of actual surgical procedures, and microphotography take students on a concise and incredible journey through the human body. The Ultimate Machine also introduces students to how physicians obtain a wealth of information about patients through observation and simple tests.

### Teacher's Preparation

Before the student uses the program set up the computer so that they can easily reach the mouse and the keyboard. Load the CD-ROM into the computer so that it is ready for the student to begin using. While students are able to work at their own pace, some students may benefit from using the program more than once.

### Suggested Discussion Questions

1. What are the ten major systems of the human body?
2. How does the skin regulate body temperature? What would happen if it didn't?
3. What are the major differences between the skeletal, smooth, and cardiac muscles?
4. How does exercise strengthen muscle? What types of exercise develop endurance? Strength?
5. Is it possible to exercise cardiac muscle? How?



# Discussion Guide for

## THE HUMAN BODY: THE ULTIMATE MACHINE

6. What important role does the skeletal system play in the body?

7. Differentiate between ligaments and cartilage?

8. What are two critical functions of bones?

9. Only 45% of blood is made up of blood cells. What is the remaining 55%, made up of

10. How does lymph and lymph nodes fight off infection?

11. What organs filter blood? Why is this important?

12. Where does blood go once it has left the heart? Be specific.

13. What are the three major parts of the brain? What are the functions of each?

14. What roles do hormones play in the body?

15. What does insulin control in the body? Where is insulin produced? Explain what happens to your food once it has entered the digestive system.

### Vocabulary

alveoli  
bone marrow  
brainstem  
capillaries  
cardiac muscle  
cartilage  
cerebellum  
cerebrum  
hemoglobin  
kidneys  
ligaments  
lymph nodes  
plasma  
skeletal muscles  
skin  
smooth muscle  
tendons

### Additional Benefits

Students will be able to:

- Explain the role of lymph and lymph nodes in fighting off infection.
- Explain how the kidneys maintain a constant blood PH and give reasons as to why this is so important.
- List the three major parts of the brain and explain their functions.
- Discuss the functions of the endocrine system.
- Explain the purpose of hormones.
- Discuss the digestion process.

### Programs Details

#### Length:

26 minutes

#### Subject Areas:

Biology

#### Audience Levels:

Junior-Senior High

#### Order Number:

1-8997SG

#### Canadian Learning Company

95 Vansittart Avenue

Woodstock, ON N4S 6E3

[Info@canlearn.com](mailto:Info@canlearn.com)

Tel:(800) 267 2977

Fax:(519) 537 1035

