Engineering

Modeling Interacting Body Systems

In this lesson, you have learned about body systems and how they interact in organisms. Now it is your turn to model interacting body systems within an organism. In this activity, you will create a model to show how systems within an organism interact to carry out a task of your choice.

FIGURE 21: Body systems interact to help keep you healthy.

Define the Systems

Decide on a task that interests you, such as running, playing video games, or talking to a friend. Think about the body systems that are likely involved in completing that task. For example, the man in Figure 21 is drinking water to rehydrate after being in the sun. His integumentary system, or skin, sweats to keep him from overheating. As he loses water through sweat, his nervous system processes information from the body and sends signals that make the man feel thirsty. To quench his thirst, the man drinks water, which eventually reaches his digestive system. Water passes across cell membranes and eventually into his blood, which transports it to his cells.

Select an Appropriate Model

Select the type of model you would like to use to illustrate the interactions among your systems. Types of models include conceptual models, physical models, mathematical models, and computer models. Your model should use media and materials effectively. It should show that you understand the concepts that you are illustrating and capture the audience's interest.

Conduct Research

Research to learn more about how the body systems interact to carry out the task that you chose. As you search for information, keep track of your sources to submit with your final model. Be sure to use sources that are reliable. For example, government and educational institutions are more reliable than personal websites. With your final model, submit a list of resources in the format specified by your teacher.

Make a Model

Your model should include text and media that illustrate how systems interact at different levels to help an organism carry out a task. Consider the levels of organization involved, such as cells, tissues, organs, and organ systems. The model should also demonstrate how energy, materials, and information flow within and between systems in the organism.

Language Arts Connection Present your model to your peers. Explain how it illustrates interactions between systems required to carry out the task you chose. Consider using illustrations, simulations, or demonstrations to explain the processes involved clearly.

A multimedia presentation combines text, sounds, and images. A successful multimedia presentation includes:

- a clear and consistent focus;
- ideas that are presented clearly and logically;
- graphics, text, music, video, and sounds that support key points; and
- an organization that is appropriate to its purpose and audience.

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