Name: Date:

HANDS-ON ACTIVITY

Modeling Interacting Body Systems

Your body systems are constantly interacting to help maintain homeostasis and help you carry out tasks. For example, a man who has been exercising in the sun might drink water to rehydrate. 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.

In this activity, you will model interacting body systems in an organism. You will make a model to show how systems within an organism interact to carry out a specific task.

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.

Describe the task you will be modeling. List at least three body systems involved in completing this task and explain how they interact with each other.

SUGGESTED MATERIALS

- balloons
- beads
- bottles, plastic
- clay
- construction paper
- dye
- foam
- hot glue gun
- hot glue sticks
- markers
- paint
- paper towel rolls
- plastic bags
- rubber bands
- straws
- string
- tubing, plastic
- twist ties
- wooden dowels
- water

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.

Describe the type of model you plan to use to illustrate interacting body systems. Why is this type of model preferred?

Name: **Date:**

CONDUCT RESEARCH

Research to learn more about how the body systems interact to carry out the task 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, science, 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. You may use the space below to take notes as you conduct research.

MAKE A MODEL

Construct your model. It 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.

COMMUNICATE

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.