

Name:

Date:

Class:

Activity Worksheet **Answer Key**

Warm-Up: Answer the following question in 2-3 complete sentences.

What sense (smell, taste, sight, touch, hearing) do you think warns you the fastest when something is dangerous? Defend your answer.

Answers will vary.

Strong responses should identify a sense (most commonly touch or sight) and explain that it helps detect danger quickly.

- Touch: Fastest due to reflex responses; warns you the fastest because skin receptors connect directly to the nervous system and can trigger a reflex. For example, touching a hot surface causes your hand to pull away before you consciously think.
- Sight: Helps avoid danger before contact; Helps detect danger before physical contact, such as seeing an approaching car or noticing a fire.
- Hearing: Alerts you to dangers you cannot see, such as a loud crash or someone shouting a warning.

Before You Build

When you touch something hot, which body systems are involved in your body's response?

Nervous system

Integumentary system (skin)

Muscular system

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Brainstorm the Model

Body Systems of the Model

Instructions: Roll both dice to determine the body systems your group will include in your model. Answer the following questions.

What two body systems does your group have?

1. Body systems will vary depending on what each group rolls.
2. Successful answers will include any valid pair (e.g., nervous + muscular, circulatory + respiratory)

Brainstorming a Stimulus

Instructions: With your group, choose one stimulus that would trigger both of your body system's reactions. Once you identify a potential stimulus, go through the list below and answer each question.

Things to consider: Answers below will depend on students' answers above.

1. Would this stimulus help the body:
 - ☐ Avoid danger?
 - ☐ Get energy or oxygen?
 - ☐ Control temperature?
 - ☐ Maintain movement or posture?
2. Does your stimulus come from:
 - ☐ Outside the body (environment, injury, temperature, activity)?
 - ☐ Inside the body (CO₂ levels, blood sugar, hormones, fatigue)?
3. Which type of response fits your system better?
 - ☐ Fast (reflex, movement, breathing change)
 - ☐ Slow (hormones, circulation changes, temperature regulation)
4. What change happens first that triggers the response?
5. What is the final action the body takes?
6. If you removed one of the systems, would the response still work? Why or why not?

Chosen stimulus: Answers will vary.

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Instructions: Once you have chosen a stimulus, fill in the table below:

Example Answers

Body Systems	Model	Chosen Stimulus
1. Nervous 2. Muscular	What do these systems do together? The nervous system senses and sends signals. The muscular system creates movement. Would the body need to respond fast or slow? This sounds like a fast response. What kind of situation would require fast sensing and fast movement? Probably something painful or dangerous.	Stepping on a LEGO brick

Plan the Model

Instructions: In the space below, sketch what your model will look like. Remember that your model should:

- Represent your assigned body systems using labeled drawings or paper cutouts (e.g., the brain, muscles, lungs, or skin).
- Use string or another material to illustrate the pathway of nerve signals between body systems.
- Clearly label each body system and the direction of signal flow.
- Demonstrate the sequence stimulus → sensory input → signal transmission → response.

Sketches will vary.

Self-Assessment Checklist

Instructions: Review the following statements and check if you agree to each statement.

Answers should check off all boxes.

- ☐ I can identify which body systems detect stimuli.
- ☐ I can explain how signals travel between systems.
- ☐ I can describe how multiple systems work together.
- ☐ My model clearly shows the stimulus-response pathway.
- ☐ I can explain why we chose certain materials for specific parts.

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Scoring Other Groups

Instructions: Rate each group's presentation on a scale of 1 (needs work) to 10 (awesome).

Scores are based on individual student's thoughts on the other groups project. There is no rubric to follow.

Group 1:

Overall rating (1–10): _____

Group 2:

Overall rating (1–10): _____

Group 3:

Overall rating (1–10): _____

Group 4:

Overall rating (1–10): _____

Group 5:

Overall rating (1–10): _____

Reflection

1. Why is it important for body systems to stay in sync?
To maintain homeostasis and proper body function.
2. How does communication between the nervous system and another body system help maintain homeostasis?
Nervous system communication: Sends signals to other systems to respond quickly and maintain balance.

Exit Ticket

1. Name two body systems that worked together in your model and explain how they responded to the stimulus.
Answers will vary.
2. How did building a model help you understand how body systems interact?
Answers will vary.

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