

# Engage: Inside the Human Machine: Mystery Box Edition

INSTRUCTOR:

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## Objective:

I can identify different body systems by using touch to explore objects that represent their function and structure. I will explain my reasoning using academic vocabulary.

## Background:

*Our bodies are made up of different systems that work together to keep us alive and healthy. Each system has a special job, and the parts of the system are designed to perform specific functions. Today, you will use your sense of touch to explore different objects that represent parts of these body systems. By making observations and using your prior knowledge, you will determine which body system each object represents.*



## Academic Vocabulary:

- **Circulatory System** – Moves blood, oxygen, and nutrients through the body.
- **Respiratory System** – Brings oxygen into the body and removes carbon dioxide.
- **Muscular System** – Helps the body move and maintain posture.
- **Digestive System** – Breaks down food into nutrients the body can use.
- **Skeletal System** – Provides structure and protects vital organs.
- **Nervous System** – Sends messages throughout the body to control actions and responses.
- **Tissue** – A group of similar cells that work together.
- **Function** – The special job or role something has.

## Activity Instructions:

1. Each group will receive a box containing an object. **DO NOT** open the box.
2. Without looking, place your hand inside and feel the object.
3. Use descriptive words to discuss how the object feels (e.g., rough, smooth, stretchy, soft).
4. Based on the texture and feel, make a hypothesis about which body system the object represents.

5. Record your observations and reasoning using the sentence frames below.
6. Once all groups have completed their guesses, we will discuss as a class and reveal the objects.

## Connect: Reflection Questions

- A. What clues helped you decide which body system the object represents?
  - B. How does this object model a real structure in the body?
  - C. Were there any objects that surprised you? Why?
  - D. How do these body systems work together to keep us alive?
  - E. If you could design a new object to represent a body system, what would it be and why?
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## Student Output: Sentence Stems

Use these sentence starters to guide your thinking and writing:

- "The object in our box felt \_\_\_\_\_, which made me think of the \_\_\_\_\_ system because \_\_\_\_\_."

- "One key feature of the object that helped me decide was \_\_\_\_\_."

- "This object is similar to the \_\_\_\_\_ in the body because it \_\_\_\_\_."

- "I originally thought this object represented \_\_\_\_\_, but I changed my mind because \_\_\_\_\_."

Name: \_\_\_\_\_

Date: \_\_\_\_\_

- "A new object that could represent the \_\_\_\_\_ system is \_\_\_\_\_ because \_\_\_\_\_."

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Box Number / System	Description	Sketch

**Teacher Instructions:****Materials List:**

- 6 small boxes – old amazon delivery boxes or the like should suffice. Space enough for a student hand – cut a hole large enough to fit a hand.
- Objects representing different body systems (sponge, balloon, rubber band, gummy candy, dry pasta, pipe cleaner neuron)
- Graphic organizers for student responses
- Pencils and colored pencils for sketching

**Engagement Strategies:**

- Start with a discussion on the importance of touch in identifying objects.
- Ask students if they can describe something just by touching it.
- Use guiding questions before and after the activity to spark curiosity.
- Encourage students to work collaboratively and discuss their thoughts before writing.

**Guiding Questions:**

1. ***What do you notice about the texture of the object?***
2. ***How does the texture relate to a function in the human body?***
3. ***What parts of the body could this object represent?***
4. ***How does this body system interact with other systems?***
5. ***What would happen if this body system stopped working?***
6. ***How can you use what you learned to better understand your own body?***

**Differentiation Options:**

- **For Struggling Learners:** Provide word banks and example descriptions to scaffold thinking.
- **For Advanced Learners:** Have students research additional objects that could represent body systems.
- **For English Language Learners:** Use visuals and gestures to support vocabulary development.

**Class Period Breakdown (60 minutes):**

1. **Introduction & Engagement (10 min)** – Discuss the importance of touch and review body systems.

2. **Mystery Box Exploration (20 min)** – Students feel objects, make hypotheses, and complete their graphic organizers.
3. **Class Discussion (15 min)** – Groups share their findings and discuss the correct answers.
4. **Reflection & Writing (15 min)** – Students respond to reflection questions and write a summary of their experience.
5. Don't forget to close!
  - **Gallery Walk & Peer Review:** Groups display their graphic organizers around the classroom. Students walk around, review other groups' work, and leave feedback or comments using sticky notes. This allows students to see different perspectives and refine their thinking.
  - **Exit Ticket Reflection:** Each student writes a short response to the prompt: "Which body system was the most difficult to identify and why?" or "What connections can you make between the body systems explored today?" This helps consolidate learning and assess student understanding.
  - **Think-Pair-Share Discussion:** Students individually reflect on one surprising discovery from the activity. They then pair up to discuss their findings before sharing with the class. This encourages verbal processing and deepens conceptual understanding.