

Body Investigators: Organs vs. Tissues

(Year 5 - Ages 10-11):

Lesson 1 of 9

Teacher Preparation

Introduction for Teachers

This lesson marks a significant and exciting "level up" for Year 5 students. Having built a strong foundation of empathy and heroism, we now transition them from "Helping Heroes" to "Body Investigators." This 60-minute lesson adapts the "Motivation to Give" theme by framing altruism as a scientific human trait.

The core objective is to build a new scientific foundation that aligns with the Year 5/6 scaffolding: understanding the difference between organs and tissues. This lesson introduces the key metaphor for this unit: Organs are the body's "Machines" (heart, lungs, etc.), while Tissues are the body's "Materials" (skin, bone, corneas, etc.). This distinction is crucial for understanding the two different, equally heroic types of donation.

Safety and Sensitivity Considerations

- **Keep it Scientific and Positive:** The tone is one of scientific wonder, not medical fear. The focus is on the amazing functions of the healthy body, not the details of illness.
- **Acknowledge Personal Stories:** At this age (10-11), students are more aware. If a student shares a personal story about illness or donation, listen with empathy, validate their feelings ("Thank you for sharing that important story with us"), and gently guide the class back to the scientific focus of the lesson (e.g., "And that's why our investigation into how these parts work is so important").
- **Clear Metaphor:** Be clear that "machines" and "materials" are metaphors to help us sort and understand.
- **Use Safe Language:** Continue to use the positive language from the previous unit ("gift," "pledge," "passed away," "helping hero") and avoid harsh or scary medical terms.

Teacher Resources

- A prop "Investigator's Notebook" or "Lab Coat" (optional, for the hook).
- Resource: "Organ vs. Tissue Fact Cards" (Simple cards explaining Heart, Lungs, Kidneys, Liver [Organs] and Corneas, Skin, Bone, Heart Valves [Tissues] and their functions).
- Student Worksheet: "Body Investigator's Report."
- Simple human body encyclopedias or access to teacher-safe online research tools.



Key Concepts & Language for Teachers

- The "Body Investigator" Metaphor: This is the new central theme for Year 5. It reframes the unit as an investigation into the science of helping.
 - Say: "For the last few years, we've learned about the stories of Helping Heroes. This year, we become 'Body Investigators.' Our mission is to investigate the science of our amazing bodies and the science of how this helping gift works."
- "Case File 001: The 'Why'" (Altruism): This adapts the "Motivation to Give" theme.
 - Say: "Our first case file is the 'why.' As investigators, we need to know why humans help. There's a scientific word for this: Altruism. Altruism is the unselfish, innate desire to help others, even when there's no reward. It's like a 'Kindness Blueprint' (from Year 3) that's built into us."
- "Case File 002: The 'What'" (Organs vs. Tissues): This is the core scientific concept.
 - The Organ Metaphor: "MACHINES"
 - Say: "Here is the key to our whole investigation. For donation to make sense, we must know the difference between two things. The first is **ORGANS**. Organs are the body's 'machines.' They are complex, amazing machines that do a big job. Your heart is a machine—its job is to be a powerful pump. Your lungs are machines—their job is to be air filters."
 - The Tissue Metaphor: "MATERIALS"
 - Say: "If organs are the 'machines,' then **TISSUES** are the body's 'materials.' They are the amazing, special materials the body is built from. Your bone is the strong 'scaffolding' material. Your skin is the flexible 'shield' material. And your corneas are the clear 'window' material in your eyes."
- Connecting to the Bigger Idea (Two Types of Gifts): This is the key takeaway.
 - Say with a sense of wonder: "Investigators, this is why our case file is so important. Organ donation and tissue donation are two different kinds of gifts."
 - Say: "Organ donation is giving a 'machine'—like a heart or a kidney—to save someone's life when their 'machine' is broken. One organ donor can save up to 7 lives."
 - Say: "Tissue donation is giving 'materials'—like skin, bone, or corneas. This gift can transform the lives of many more people. A gift of skin can save a burns victim. A gift of bone can help someone walk. And a gift of corneas can make someone who is blind see again. They are two different, but equally heroic, gifts."



Magical Body Facts for Year 5 (Ages 10-11)

- **Brain Power (Organ):** Your brain, an organ, is the most complex thing in the known universe. It has over 86 billion nerve cells, creating more connections than there are stars in our galaxy.
- **Your Skin Shield (Tissue):** Your skin is your body's largest organ (though it's also a collection of tissues!). You shed about 30,000 to 40,000 dead skin cells every minute. You get a whole new "shield" about once a month!
- **The Liver's "Superpower" (Organ):** The liver is a "super-machine" with over 500 jobs, from cleaning your blood to storing energy. It's also the only organ that can regenerate—it can regrow itself!
- **The See-Through Window (Tissue):** Your cornea (the "window" of your eye) is one of the only tissues in your body that has no blood vessels at all. It gets its oxygen directly from the air! This is one reason it can be transplanted so successfully.
- **A Bone "Factory" (Tissue/Organ):** Your bones are not just "scaffolding" material; they are also living "factories." The marrow inside your large bones produces over 2 million new red blood cells every second.
- **Heart's Electrical Team (Organ):** Your heart is so powerful it has its own electrical system (like a built-in 'team') that tells it to beat. This is why a heart can continue to beat for a short time even when separated from the body.
- **The "Spare Part" We Can Give Twice (Organ):** A person can donate a whole kidney (one of their "spare machines") while they are still alive to help a family member or friend.

