

Body Investigators: The Process Pathway

(Year 5 - Ages 10-11):

Lesson 3 of 9

Teacher Preparation

Introduction for Teachers

This lesson is the next step in the "Body Investigator" unit and directly addresses the Year 5/6 scaffolding: "the basic transplant process." It adapts the "Future of Transplantation" theme by focusing on the current process, framing it as a wondrous, scientific "pathway" or "flowchart."

In Lesson 1, students learned the "what" (Organs = Machines, Tissues = Materials). In this lesson, they investigate the "how." The core objective is for students to discover that the "process pathway" for an organ is very different from that of a tissue, based on their scientific properties. This demystifies the process, replacing "magic" with logical, safe, and respectful science.

Safety and Sensitivity Considerations

- Focus on the "Flowchart," Not the "Operation": This lesson is about logistics and science, not surgery. Use the "Process Pathway" flowchart activity to keep the focus on the steps. Avoid all medical details of the procedures.
- Differentiate the "Passing Away" Scenario: This is a key scientific point. Be gentle but clear:
 - For Organs: Use the specific, non-scary phrase: "A person must pass away in a special part of the hospital, in an Intensive Care Unit (ICU), where machines can help keep the organs healthy." This explains why so few people can be organ donors.
 - For Tissues: Use the phrase: "A person can pass away at home, or in any part of the hospital." This explains why many more people can be tissue donors.
- Respectful Language is Key: Continue to use "passed away," "respectfully collected," "Helping Hero," and "kind family." The tone is one of scientific awe and respect for the process.

Teacher Resources

- Whiteboard or smartboard.
- Resource: "The Process Pathway Cards" (Two sets of scrambled, colour-coded cards for groups: one for the "Organ Pathway" and one for the "Tissue Pathway").
- Student Worksheet: "My Investigation of the Process Pathway."
- The "Organ vs. Tissue Fact Cards" (from Lesson 1) for review.



Key Concepts & Language for Teachers

- The "Scientific Mapper" Metaphor: This is the central theme for the lesson.
 - Say: "Okay, Investigators. We've opened Case File 001: The 'Why' (Altruism). We've opened Case File 002: The 'What' (Organs vs. Tissues). Today, we open Case File 003: The 'How.' We are becoming 'Scientific Mappers' to chart the exact 'Process Pathway' a life-saving gift takes."
- Reviewing the Core Concept (Machines vs. Materials): This is the essential prerequisite.
 - Say: "Who remembers the difference from Lesson 1? Organs are... (the 'machines'). Tissues are... (the 'materials'). This difference is the key, because a 'machine' and a 'material' are donated in two very different, special ways."
- Pathway 1: The Organ ("Machine") Pathway: This pathway is about urgency.
 - Key Concept: Organs are "living machines" that cannot survive for long on their own. The process is a direct, urgent relay (building on the Year 4 "Relay Team" concept).
 - Simplified Steps:
 - The "Hero's Pledge": A person has passed away in a specific way (in an ICU in a hospital on a ventilator) that keeps the "machines" healthy.
 - The "Hero's Echo": The family bravely says "yes" to donation (honouring the "Hero's Echo" from Lesson 5, Year 4).
 - The "Team Managers" (Coordinators): They find a "perfect match" for the organ—someone who is sick and whose body will accept the new "machine."
 - The "Super-Mechanics" (Doctors): The organ is carefully and respectfully transported, and the transplant "repair" is performed.
 - Say: "The pathway for an organ is a race against time. It's an amazing, high-speed relay, because the 'machine' needs to be transplanted very quickly to keep working."
- Pathway 2: The Tissue ("Material") Pathway: This pathway is about storage and preparation.
 - Key Concept: Tissues are "materials" (skin, bone, corneas). They are not "living machines" in the same way. They do not need to be transplanted in a few hours. This introduces the key new concept for Year 5: The "Tissue Bank."
 - Simplified Steps:
 - The "Hero's Pledge": A person passes away (this can be at home or in a hospital).
 - The "Hero's Echo": The family bravely says "yes" to donation.
 - The "Materials Collection": The "materials" (like corneas or skin) are carefully and respectfully collected (this can happen up to 24 hours later).
 - The "Tissue Bank": This is the magic step! The tissues are not rushed to a recipient. They are taken to a special, safe, scientific place called a "Tissue Bank." It's like a 'library of materials' where they are safely stored.
 - The "Repair": Weeks or even months later, a doctor (a "Super-Mechanic") can request a "material" from the "Tissue Bank" to help someone (e.g., a cornea "window" to help someone see, or skin "shields" to help a burns victim).
 - Say: "The pathway for a tissue is not a race. Because they are 'materials,' they can be safely stored in a 'Tissue Bank.' This is amazing! It means one hero's tissue donation can be a 'library' of gifts, helping many different people over a long time."



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.

