

The System Challenge: Mapping the Process Pathway

(Year 6 - Ages 11-12):

Lesson 3 of 9

Teacher Preparation

Introduction for Teachers

This lesson directly addresses the Year 6 curriculum focus on Systems Thinking (D&T) and builds logically from L1 (Scale) and L2 (Empathy). Students have learned that donation has a massive ripple effect and requires empathetic communication. Now, they must investigate the scientific and logistical System that makes this altruism possible.

The core objective is for students to discover that the Organ Transplant Pathway is vastly different from the Tissue Transplant Pathway due to the scientific properties of the parts (Organs = urgent; Tissues = storable). This demystifies the process, replacing "magic" with the awe-inspiring reality of precise scientific coordination and teamwork.

Safety and Sensitivity Considerations

- Focus on the Flowchart, Not the Operation: This lesson is strictly about logistics, sequence, and coordination, not surgery or medical graphics. Use the "Pathway" metaphor to keep the focus on the steps and the system.
- Emphasise Teamwork and Organisation: Frame the entire process as an incredibly safe, careful, and coordinated team effort. The heroes here are the systems, the people, and the planning.
- Differentiate the "Passing Away" Scenario Gently: This is a crucial scientific distinction for this topic. Be gentle but clear:
 - For Organs: Use the specific, non-scary phrase: "A person must pass away in a special area of the hospital, like an Intensive Care Unit (ICU), where equipment can help keep the organs healthy." This explains the rarity (L1 fact).
 - For Tissues: Use the phrase: "A person can pass away at home, or in any part of the hospital." This explains why tissue donation is more common.
- Respectful Language is Key: Continue to use "passed away," "respectfully collected," "Tissue Bank," and "Heroic Recipient." The tone is one of scientific respect and wonder.

Teacher Resources

- Whiteboard or smartboard.
- Resource: "The Process Pathway Cards" (Two sets of scrambled, colour-coded cards for groups: one set for the "Organ Pathway" and one for the "Tissue Pathway").
- Student Worksheet: "The Process Pathway Challenge" (Worksheet with two blank flowcharts).
- Markers, highlighters, and pencils.
- Teacher Resource: A simplified visual showing a flow chart or road map.



Key Concepts & Language for Teachers

- Metaphor: The Process Engineer: "Today, we are Process Engineers and Scientific Mappers. Our job is to take the confusing event of donation and map it into a clear, perfect Pathway."
- Core Difference (Review L1): "Remember, an organ is a delicate 'machine' that runs the body (like a heart or lungs). A tissue is a strong 'material' that builds the body (like bone or corneas). This scientific difference changes the whole process."
- Pathway 1: The Organ (Machine) Pathway (The Race Against Time):
 - Concept: Organs are living and must be transplanted quickly (often within hours) to survive. This requires high-speed coordination.
 - Simplified Steps: 1. Heroic Family Says YES. 2. The Coordinator finds the perfect recipient match (urgency!). 3. Super-Mechanics (Surgeons/Teams) travel to retrieve the organ. 4. Organ is quickly transported and the transplant (repair) occurs.
 - Say: "The pathway for an organ is an amazing race against time that requires perfect teamwork."
- Pathway 2: The Tissue (Material) Pathway (The Library of Gifts):
 - Concept: Tissues (corneas, skin, bone) are strong materials that can be safely processed and stored. They are not as time-sensitive.
 - Key New Concept: The Tissue Bank: This is the magical step! Tissues are sent to a special, safe laboratory called a Tissue Bank. They are processed and stored like a 'library of materials,' ready to be used months or even years later.
 - Say: "Because tissues can be stored in the Tissue Bank, one generous donor can help save and heal people over a long period of time—it's truly a gift that keeps on giving."

Heart Magical Body Facts for Year 6 (Ages 11-12)

- The Super-Healing Skin System: Your skin, a primary tissue donated, replaces all of its cells about once a month. This incredible self-repair system is what allows donated skin to heal severe burn victims.
- The Immune System is a Security System: Your body is constantly trying to protect itself. After a transplant, doctors must use special medicines to temporarily calm your body's amazing security system so it doesn't reject the gift of the new organ.
- The Bone Scaffolding: Your skeleton is completely renewed approximately every 10 years. Bone tissue, which can be donated to help people walk or repair joints, is constantly rebuilding itself—the ultimate sustainable material!
- The Kidney's Travel Time: A donated kidney—the most commonly transplanted organ—has only about 24–36 hours from the time it is retrieved until it must be transplanted. This fact shows why the coordination system (L3 focus) is so vital.

