

The Ripple Effect: Modeling Impact

(Year 8 - Ages 13-14)

Lesson 2 of 9

Teacher Preparation

Introduction for Teachers

In Year 8, students are starting to understand their place in a wider social web. This lesson leverages that developmental stage by modelling Social Networks. We move beyond the simple "One donor saves lives" slogan to a rigorous investigation of Impact.

The Core Concept: Donation is a "High-Impact Event." In sociology and network theory, certain nodes (people) have outsized effects on the network. A Donor is a Super-Node—a single point that stabilizes and repairs multiple other broken parts of the network (recipients and their families).

Metaphor: The Web. If you touch a spiderweb at one point, the vibration travels to the edge. Donation is a vibration that stabilizes the whole web.

Safety and Sensitivity Considerations

- The "Broken" Network: When discussing illness, avoid implying that sick people "break" the network. Instead, frame illness as a stressor on the network, and donation as the repair or strengthening agent.
- Privacy: Remind students that real-world donation networks are anonymous to protect privacy. We are modelling the concept, not specific people.
- Cultural Networks: Acknowledge that different communities (Nodes) communicate differently. Some use oral storytelling, some use social media. A good "Signal" (message about donation) needs to work for all nodes.

Teacher Resources

- The String Game: You will need a large ball of wool/string.
 - Setup: One student is the "Donor." Seven students are "Recipients." The rest are "Family/Friends."
 - Action: The Donor holds the string end. They toss the ball to Recipient 1 (Heart). Recipient 1 tosses to their "Family." The string goes back to the Donor, then to Recipient 2.
 - Result: A visible, complex web originating from one person.



Key Concepts & Language for Teachers

1. The Multiplier Effect (1:7)

- The Fact: One organ donor can save up to 7 lives (Heart, Lungs x2, Liver, Kidneys x2, Pancreas).
- The Visual: In a network graph, the Donor is the "Hub," and the 7 recipients are "Spokes."
- The Extension: Tissue donation (eyes, bone, skin) can help dozens more. The web expands.

2. The Secondary Impact (The Ripple)

- Primary Impact: The Recipient survives.
- Secondary Impact: The Recipient's family is relieved of caretaking duties/grief. The Recipient can return to work/school (economic impact). The Recipient might have children (generational impact).
- Activity: We map these secondary nodes to show that the "7 lives" figure is actually an underestimate of the total impact.

3. Barriers in the Network

- Why doesn't the signal always travel?
 - Noise: Misinformation or myths blocking the message.
 - Broken Links: Family members not talking to each other (No conversation = No consent).
 - The Lesson: We need strong links (Conversation) to ensure the signal (Donation) gets through.

The Alchemist's Data: Network Theory (Year 8)

The "Six Degrees" Concept You are connected to almost everyone else on earth by six steps. In the donation network, the steps are incredibly short.

- Donor -> Recipient (Step 1).
- Recipient -> Their Community (Step 2).
- Result: A donor in Perth can save a life in Brisbane, connecting two completely different communities instantly.

The "ROI" (Return on Investment) In medical ethics, donation has one of the highest "ROIs" of any procedure. A single decision (registering) costs \$0 but produces "Human Capital" (years of life lived) worth millions to society in terms of work, love, and community contribution.

