

Neuron Structure and Function: 2-Minute Neuroscience

Learning Objectives

- Understand the basic structure of a neuron
- Explore the process of neural communication
- Develop critical thinking skills about neurological processes

Inquiry Investigation: Neuron Communication Challenge

Part 1: Structural Analysis

1. List the five main structural components of a neuron mentioned in the video:

- [1]
- [2]
- [3]
- [4]
- [5]

Part 2: Signal Transmission Simulation

Scenario: Design a creative analogy that explains how a neural signal travels through a neuron, from dendrites to axon terminals.

Your analogy should include:

- A clear representation of how information is received
- How the signal is processed
- How the signal is transmitted to the next neuron

Write your analogy here:

Part 3: Critical Thinking Questions

1. Why do you think neurons have such a complex structure for communication?
2. How might differences in neuron structure impact brain function?
3. Estimate the potential number of connections in a human brain, given 85 billion neurons.

Part 4: Research Extension

Choose ONE of the following research paths:

- Investigate how neurotransmitters differ and their specific functions
- Explore what happens when neural communication is disrupted
- Research how neural plasticity works

Reflection

Write a short paragraph explaining the most surprising thing you learned about neurons: