The Connection
Activity Instructions

Purpose:
The purpose of this activity is to make students aware of the way neurons transfer information to the brain.

Materials:
- Two sets of code cards
- Transparency of the Diagram of Student Arrangement

Procedure:

1. Make two copies of the code cards below. Cut one set apart to be given to select students. Keep one set together for use as the reference for the brain.

2. Arrange students as shown in this diagram. Have students count off giving each student a number. (If students have a class number, use it.) Assign positions by having students correspond their number to a position on the Diagram of Student Arrangement. Use a transparency of the diagram for students to see their assigned positions and corresponding job titles.

3. All students must be touching palm to palm.

- Neurons - End neurons will be touching only one student. All other neurons will be touching two other students, one for incoming signals (from another neuron) and one for outgoing signals (moving towards the spinal cord and brain).

- Spinal Cord - Each of the six student spinal cords (students 2-7 on the diagram) must have a connection to one neuron. The student spinal cords must also be connected to each other. This means the spinal cord students will have two hands connecting to their incoming hand, but only be connected to the higher spinal cord student with the outgoing hand.
- Brain - The top spinal cord student will be connected to the brain. See the diagram.

4. Pass out the numbered code cards to the end neurons and the intact code cards to the brain to be used as the key.

5. Remind students that this is a silent activity. No oral response should be made by any part of the nervous system other than the brain.

6. Call out a number (1-6) that corresponds with a number on a code card.

7. The neuron holding the card sends the message to the partner neuron closer to spinal cord by following the code instruction on the card. Each neuron that receives the message passes it along by repeating the code they receive until it finally reaches the brain.

8. The brain interprets the message and tells orally what the signal means.

9. The beginning neuron confirms the message. If the message is not correct, discuss what may have caused the problem. Was it a broken line in the nerve path (injury to the body)? Was it a mistake in the message passed on (nerve disease)? Did the brain make a mistake (brain injury)?

10. Repeat steps 7 – 9 until all messages have been sent to the brain and identified by the brain.

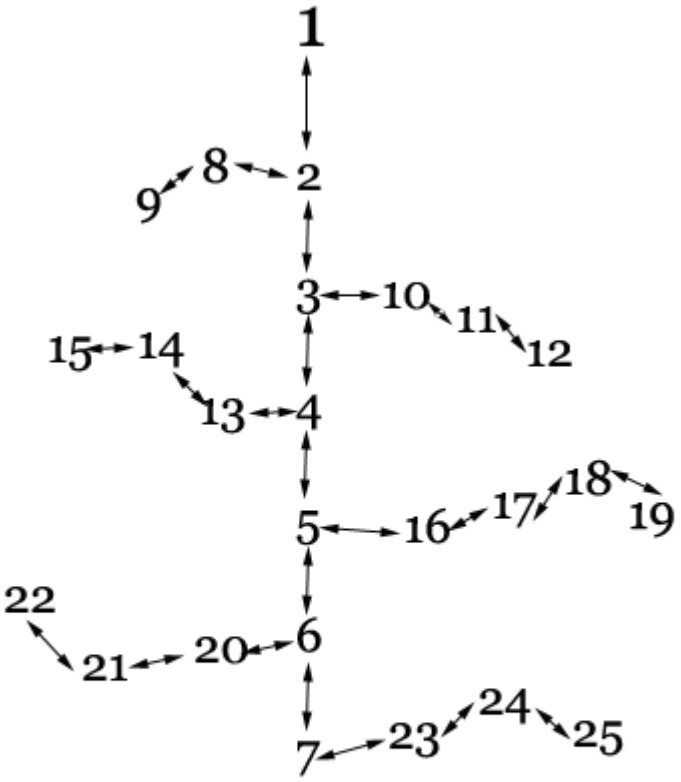
The Connection
Diagram of Student Arrangement

1 = brain

2 – 7 = spinal cord

3 – 25 = neurons

Adjust for more or fewer students at the end of the neuron chains.



The Connection
Code Cards

Cut this numbered set for disbursement to neurons.

3 **I smell a pizza.** Wiggle all five fingers.	4 **I'm thirsty.** Tap the thumb three times.
2 **My chin itches.** Slide the little finger up and down the outside of the next little finger.	5 **My shoes are too tight.** Bend all five fingers in to make a fist.
1 **I'm going to sneeze.** Pull only the thumb between the palms.	6 **I feel a cold hand.** Turn the whole hand around so the back of the hand is touching the palm of the other hand.

Keep this unnumbered set in tact as a key for the brain.

I smell a pizza. Wiggle all five fingers.	**I'm thirsty.** Tap the thumb three times.
My chin itches. Slide the little finger up and down the outside of the next little finger.	**My shoes are too tight.** Bend all five fingers in to make a fist.
I'm going to sneeze. Pull only the thumb between the palms.	**I feel a cold hand.** Turn the whole hand around so the back of the hand is touching the palm of the other hand.