



# “Getting Wired” Activity

## **Materials Needed**

- Individual cards with parts of neuron
- Double-stick tape squares
- Small rubber ball
- Hat, lei, or other “identifier” for cell bodies

## **Instructions**

*(Note: This activity requires a facilitator to lead the group through the process step by step.)*

- Give each participant a card, but ask them not to look at the cards until they receive further instructions.
- Instruct participants that they will be forming a neuron. Each participant’s job is to link up with the appropriate other parts, in the correct order, to form a neuron. Inform them that each neuron contains:
  - One cell body
  - At least two dendrites
  - At least two parts of an axon, linked together to form one long axon
- Tell participants to look at their cards, and then place them on their shirts or name tags with double-stick tape, so everyone can see them.
- Hand “identifiers” to the people who are cell bodies, and inform them that they are in charge of getting the neurons assembled.
- **Step 1: Neurogenesis (Forming Neurons)**
  - Encourage the group to form themselves into neurons by connecting with others in the appropriate order. (At the Better Brains for Babies train-the-trainer workshops, small-group facilitators hand out cards to people in their groups, and we instruct them to form neurons only with other people in their color group.)
  - When everyone has a place, encourage them to check and make sure their neuron has the appropriate number of parts, assembled in the appropriate order. Make corrections as needed. (The axons and dendrites should be on opposite sides of the cell body!)
- **Step 2: Neural Migration**
  - Assign neurons different corners of the room, and have them migrate (as a complete neuron) to those parts.
  - Be sure at least two neurons migrate to each part of the room.



## “Getting Wired” Activity (continued)

- **Step 3: Synaptogenesis (Getting Connected) and Firing**
  - Encourage each neuron to make connections with another neuron in the same area of the room. Check to be sure neurons are connected in the appropriate order (axons to dendrites).
  - When connections are made, encourage each group to practice sending a message. Hand a rubber ball to one of the dendrites, and have that person pass it along the neuron. Each person should say “Fire!” as he/she passes the ball. Remind axons that they cannot just hand the ball to the dendrite of the next neuron; they need to toss it to that person because the signal has to pass across the synapse. Have each group practice sending messages a few times. For purposes of this activity, the last axon in the group can toss the ball back to the first dendrites.
  - When groups get good at sending one message, introduce a second ball at the same time. Remind them that neurons are receiving multiple messages and have to make decisions about sending them on.
  
- **Step 4: Broadening Connections**
  - Inform each set of neurons that it is time for them to make connections with additional neurons. Encourage neurons to make connections around the room, until all group members are connected in a large circle.
  - Begin sending messages by handing the rubber balls to the dendrites of several different neurons. Encourage neurons to transmit the signals as quickly as possible.
  - Encourage several facilitators to act as neurotransmitters. Some neurotransmitters can step into the “synapse” areas and block the signals by taking away the balls. Others can amplify the signals by shouting “FIRE!” much more loudly and/or passing the ball more vigorously.
  
- **Step 5: Debriefing**
  - When the activity is finished, have everyone return their cards and props and go back to their seats.
  - Spend a few minutes debriefing with the group. The following questions may help guide the debriefing:
    - What was easiest about this activity? What was most difficult?
    - What did you learn?
    - How did the activity change when you had multiple messages to send?
    - Why were the group facilitators taking the balls? What was their role in the brain?
    - How might you use this activity with groups you teach?

# Frontal Lobe

**Temporal Lobe**

# Parietal Lobe

# Occipital Lobe

**Dendrite**

**Dendrite**

**Dendrite**

**Dendrite**

**Cell Body**

**Axon**

**Axon**

**Axon**

**Neurotransmitter**  
(Block signal)

**Neurotransmitter**  
(Enhance signal)