Network Test Activity Guide

Mission 2: Neuron Navigator, Objective 5

Name:

The activity for this objective is to run a simulation of multiple neurons communicating in an inter-connected network chain. CodeX neurons will communicate with more than one CodeX neuron during the simulation.

1. The chart below has room for up to 22 students. You can have more than 22 CodeX.

- One CodeX will be assigned # 1 and initiate the neuron network.
- One CodeX will be assigned the last # and end the network communication.
- Multiple CodeX neurons will be assigned the other #s.

Notes:

- All CodeX will be on radio channel 6, set in the program code. The channel doesn't change at any time.
- You can have any number of CodeX neurons using the middle #s.
- If needed, you can use more #s than 7 if you have more than 22 students. There can be two, three, four, or more CodeX on each of the middle #s.
- Use fewer #s if you have less than 22 students. You should use at least 4 #s for an interesting simulation.

Students and their #s. Write the name of the student assigned each #.

# 1				
# 2				
# 3				
# 4				
# 5				
# 6				
# 7				

2. Go to ***File → Browse Files...*** and open the file called **BRN_neural_network2**	☐ File opened
3. Go to ***File → Save As*** and name the file **neural_network2**	☐ File saved as **neural_network2**
4. Follow CodeTrek to set the maximum # number in the chain: • Assign a value to CHAIN_MAX (last # used in the simulation)	☐ CHAIN_MAX assigned ☐ My #: _____
5. Follow CodeTrek to complete the Main Program: • Call the function to set your CodeX # • Call the functions to start the simulation • Call the function for the CodeX to wait for their turn • Call the function to end the simulation **NOTE:** *When adding code, be very careful with the indenting, spelling and punctuation!*	☐ CodeTrek followed

6. Select your assigned #. Press BTN_A to scroll through the #s, and then press BTN_B to select the #.

- ☐ Role is selected
- ☐ Codex displays the ASLEEP face

7. # 1 starts the simulation by pressing **BTN_A.**
When the program starts, the code for # 1 selects a random image and will pass on the information as a message.

- ☐ Simulation started
- ☐ Random image selected

8. # 1 fires signals (U/D/L/R) until its strength is at least 100.

- It will then fire a message to all # 2 CodeX.
- Each # 2 CodeX fires signals until it reaches strength 100.
- Each # 2 CodeX then passes the message to # 3 CodeX.
- The process is repeated until the last CodeX reaches its strength of at least 100.

- ☐ All CodeX neurons display the same random image

9. The last CodeX fires a signal back to the first CodeX. The first CodeX selects a random color for the pixels and sends the information to all CodeX devices. The simulation ends.

- ☐ The pixels of all CodeX devices flash the same color
- ☐ Each CodeX device displays the simulation time

Simulation times:

	Time	Image	Pixel color
Sim #1			
Sim #2			
Sim #3			
Sim #4			

To run the simulation again, restart the program.

Record your time for at least three simulations. You can change your # in the chain each time, or keep the same #.

10. Reflection: What did you learn from this objective and simulation?