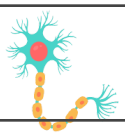

Code A Neuron Activity Guide

Mission 2: Neuron Navigator, Objective 3

Name:

The activity for this objective is to run a simulation of a single neuron. The simulation includes three phases:

1. The dendrites receive pulses. The pulses increase the strength of the signal, which needs to reach 100. If the signals aren't received quickly enough, the strength diminishes.
2. The soma processes the signals and decides on the response.
3. The axon responds to the signal and transmits signals to the next neurons.

1. The program imports a file that has been loaded into your file system. You must open and run the file to load it onto the CodeX. > DO THIS: Go to File➜ Browse Files... > Scroll through list and find the **neurons.py** file > Open the file and then run the file. > Nothing will show on the screen, but the file is now loaded on the CodeX.	☐ Open *neurons.py* file ☐ Run the file
2. Start a new file and call it **neuron_sim**	☐ File created
3. Copy and paste the code from CodeSpace into the file.	☐ Code copied and pasted
4. Follow CodeTrek to: ● Program two more buttons to *fire* signals ● Add code to call the **processing()** and **responding()** functions ● Add another function call to display an ending message	☐ CodeTrek followed
5. Run the code. Fix any errors or problems with the code.	☐ No errors in code
6. Run the code. Read the instructions on the display screen.	☐ Instructions read
7. Start the simulation by pressing **BTN_A**	☐ BTN_A pressed
8. Use the four buttons on the left to fire responses to the dendrites. ● Use BTN_U, BTN_D, BTN_L and BTN_R ● You can use any or all of the buttons ● Press quickly, strength decreases in small increments of time ● If the strength becomes negative, press faster! ● Like an actual neuron, some signals reverse the strength ● Your signal must reach a strength of at least 100 and then it "fires" Record your time for the simulation. ● Run the simulation again by pressing **BTN_A**. ● Record at least three simulation times. ● Stop the program by pressing **BTN_B**.	Simulation times: Sim #1 Sim #2 Sim #3 Sim #4

Reflection: What did you find interesting about the neuron simulation?

> Use the space on the next page to write your reflection.

Reflection: