Work efficiently because there are many parts to this webquest. Research and findings will go on a separate sheet of paper.

Part 1: Who was Phineas Gage?


Who was Phineas Gage and what happened to him? Explain why Phineas’ personality changed due to his injury.

Part 2: Are you left or right brained?

www.web-us.com/BRAIN/braindominance.htm

Take the Test. Are you left or right brained? What does this mean? Read the attached information.

Part 3: The Brain

www.g2conline.org Fill out the attached worksheets for the 3D brain.

Part 4: Neurons

www.g2conline.org Then, search for “Virtual Neuron”. Using two neurotransmitters, balance the inputs of the neurons so that you get the primary neuron to fire. Summarize your findings from the animation.

Part 5: Nerve Impulse

http://www.mind.ilstu.edu/flash/synapse_1.swf

1. Neurons communicate with other neurons at __________.
2. At the synapse the ____ of one neuron comes close to the ____ of another neuron.
3. They communicate by using what kind of messengers? _______

Part 6: Action Potenial

http://www.blackwellpublishing.com/matthews/actionp.html

View the animation. It shows the action potential moving in one direction along the axon. What is happening to the charge on the outside and inside of the cell as the action potential moves?
Part 7: Sodium/Potassium Pump


View the animation.
1. How many Na+ ions are being pumped out?
2. How many K+ ions are being pumped in?
3. Since the numbers are different, could this cause imbalance of charge on either side of the membrane?
4. What molecule is providing the energy for this ion transport?
5. What is the process called when particles are being transported against the concentration gradient across a membrane?

Part 8: The Secret Life of the Brain

http://www.pbs.org/wnet/brain

1. Click on “mind illusions” and try one the illusions. Explain how it works.
2. Click on “teenage Brain” and explore why teens sleep more than adults.
3. Explore the link about desire and addictions. Briefly explain what causes addictions.

Part 9: Genes to Cognition

http://www.g2conline.org/

Check out some of their other interactive animations. Search “Fly School”, “Swimming Mice”, and “Reading Faces”. You should find all of these animations interesting.

Either through the concept map or the railroad at the top of the screen, begin by navigating through the depression module. Summarize your findings on depression. What is going on inside the nervous system?