

Name _____ Date _____ Period _____

Nervous System Webquest

Go to the following website

http://www.mind.ilstu.edu/curriculum/neurons_intro/neurons_intro.php

1. What are the two types of cells that make up the central nervous system?
2. In your own words, what is a neuron? (Hint: click on the link that says "neuron")
3. In your own words, what is a synapse, and where is it located?
4. What are three types of information that neurons must process? What does each type allow us to do?
5. How many different types of neurons might there be? How many neurons might be in the brain alone?
6. In your own words, what is a glial cell?
7. What are the three different kinds of neurons, and what do each do?

8. What are two functions of the cell body?

9. What is a dendrite? What is an axon? How many of each can you have in a neuron?

10. What is an axon terminal? What does it release?

11. What do neurotransmitters do?

12. What is an action potential? What is conduction?

13. What are ions and what role do they play in passing an electrical signal?

14. What is meant by polarization? What is depolarization?

15. What is the threshold?

Look at the animation for questions 16-22

16. What is membrane potential? Why does it exist?

17. Describe what happens at resting potential.

18. What happens when a neuron is stimulated?

19. During depolarization, which ions rush in? How does this change the inside of the membrane?

20. Why do potassium ions move through the potassium channels? What does this result in?

21. What is the refractory period?

22. Draw a graph and label the following: polarization, stimulus, full depolarization, action potential, repolarization, refractory period. Use units on your y axis.

23. How quickly does an action potential travel along the axon?

Use the Synapse animation for questions 24-29

24. What is neurotransmission? Where does it occur?

25. What are the two types of synapses?

26. _____ between two neurons occurs when a gap junction fuses the membranes of a pair of dendrites together.

27. Most neuron to neuron _____ occur between the axon terminal of one neuron and the dendrite of another.

28. What does chemical neurotransmission require?

29. When the sum of all the synaptic potentials equals or exceeds the threshold, the neuron will fire an _____ along its axon.

30. What fills the synaptic cleft? What type of barrier does it create for the electrical signal?

31. What is the function of the neurotransmitter?

Use the chemical neurotransmission animation to complete questions 32-34

32. What part of the neuron would be the presynaptic neuron, and the post synaptic neuron?

33. Why are neurotransmitters necessary for the conduction of a nerve impulse?

34. What must happen for an ion channel to open?