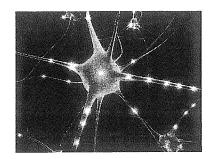
Pipe Cleaner Neuron



Objective: To explore the structure and function of the parts of a neuron.

Materials: Pipe cleaners (precut and separated by size: long, 1/3, 1/4, and 1/8 length).

<u>Directions</u>: Students will learn about special cells called neurons that make up the brain and spinal cord while building a neuron out of pipe cleaners.

There are 5 basic parts to a neuron, as you build each part, explain its function. There are over 100 billion neurons in your brain!

1) <u>Cell body</u> : take one long pipe cleaner and roll it into a ball. Role
2) <u>Axon</u> : take another long pipe cleaner and attach it to the new "cell body" by pushing it through the ball so there are 2 halves sticking out. Take the 2 halves and twist them together into a single extension. Role -
3) <u>Dendrites</u> : take 2 short pipe cleaners (1/3 length) of the same color and push them through the "cell body" on the side opposite the axon. Role -
4) <u>Myelin Sheath</u> : wrap 4 short pipe cleaners (1/8 length) of the same color evenly spaced along the length of the axon. Role -
5) <u>Synaptic Button</u> : wrap a small pipe cleaner (1/4 length) on the end of the axon. Role

LS - Activity #27

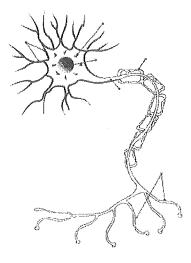
QUESTIONS:

1. Look at the diagram of the two neurons below. Use arrows to show the direction the nerve impulse travels.





Label the following structures on the neuron diagram below:
 axion dendrite
 cell body myelin sheath



- 3. Why is it necessary for there to be space between the axon of one neuron and the dendrites of another neuron?
- 4. What is the purpose of the myelin sheath?
- 5. What causes a nerve impulse move along the nerve fiber?
- 6. How do sensory neurons, association neurons, and motor neurons differ?
- 7. What causes a reflex? What is the advantage of a reflex action?