Introduction: The brain is made up of about 100 billion nerve cells (also called "neurons"). A neuron has 4 basic parts: the dendrites, the cell body (also called the "soma"), the axon and the axon terminal.

Objective

- Students will learn about the structure of a neuron by constructing a model.
- In a group, try to assemble a neuron within 15 minutes using the craft supplies provided. The group with the most accurate representation, that incorporates the most amount of vocabulary will win a prize.

Preparation and Materials

Complete the introduction to a neuron using the book p. 392. (10 minutes)

Label the neuron on the following page and write the function for each of the terms below:

- Dendrites
- Cell body
- Nissl body
- Axon
- Neurilemma
- Schwann cell
- Node of Ranvier
- Axon terminals
Procedure/Methods

1. You will be given a variety of craft materials.
2. In 5 minutes, build a model of a neuron by memory using the supplies for the different parts of the neuron. Label each part with its scientific name.
3. Submit your neuron to the teacher who will choose a winner.
4. Review with the class the different parts of the neuron and answer the conclusion questions.

Summary and Conclusion

Compare your completed neuron to the figure during the class discussion:

1. What parts of your model were anatomically correct?

2. What parts of your model were mislabeled or in the wrong place?

3. What parts of your model were missing?

4. What parts of the neuron make up the processes?

5. What parts of the neuron are found inside the soma?

6. List, in order, the cell parts that would carry a message from one neuron to the next.

7. Which of these parts is the main receptive or input area?

8. What are the conducting regions?

9. What part of the neuron is the secretory region? What would it be called this?
10. REVIEW: What type of neurotransmitter is released from this region if the neuron is messaging a muscle cell?

Extension (optional credit) 10 points:

- Construct different types of neurons: unipolar, bipolar, multipolar, using materials at home. Turn in your models for credit.
- Discuss how neurons are similar and different to muscle, integumentary and bone cells.