

Procedure

It is easy to become overwhelmed by the large amount of detail in biological systems. To avoid this, biologists organize and classify things. New insights and knowledge are often gained in this way. In this activity you will complete charts of information about the human nervous system.

- Figure 1 lists the three principal parts of a neuron. Complete the table.

Figure 1: Neuron

| Part | Structure | Function |
|-----------|------------------------------------------------------------------------------------|---------------------------------------------------|
| Cell body | The main part of the neuron. It contains the nucleus and many branched extensions. | |
| Axon | | Carries the action potential away from cell body. |
| Dendrite | | |

- What is the difference between a sensory neuron and a motor neuron?
- What is the difference between a neuron and a nerve?
- Figure 2 contains a list of the parts of the central nervous system. Complete the table.

Figure 2: CNS

| Part | Location | Function |
|------------------|----------------------------------------------------------------------------------------|-------------------------------------------------|
| Cerebrum | | It controls thought, emotion, and intelligence. |
| Cerebellum | | |
| Lower Brain stem | Located below the cerebrum; consists of the midbrain, pons, and the medulla oblongata. | |
| Diencephalon | | |
| Spinal cord | | |

5. Figure 3 is a chart of the functions of the peripheral nervous system. Complete the table.

Figure 3: PNS

| Part | Function |
|--------------------------------|------------------------------------------------------------------|
| Cranial nerves | |
| Spinal nerves | |
| Sympathetic nervous system | Responsible for emergency conditions. Fight-or-flight responses. |
| Parasympathetic nervous system | |

6. Which parts of the peripheral nervous system compose the autonomic nervous system?

7. What is the function of the autonomic nervous system?

8. Compare the actions of the parasympathetic nervous system to the sympathetic nervous system.

9. Label the parts indicated in the drawing of a generalized nerve cell.

